DOCUMENT RESUME

ED 181 733 FL 010 901

AUTHOR Miller, Anne
TITLE Hearsay, a Listening Workbook: Series B Video Lectures. English for Special Purposes Series: Autobody Repair.
INSTITUTION Honolulu City and County Office of Human Resources, Hawaii.; Honolulu Community Coll., Hawaii.
SPONS AGENCY Department of Labor, Washington, D.C.
PUB DATE 77
CONTRACT DL-15-6053-37
NOTE 124p.; For related documents, see FL 010 897-905

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Adult Education; *Auto Mechanics; Cloze Procedure; *English (Second Language); *English for Special Purposes; Instructional Materials; *Language Instruction; *Listening Comprehension; Second Language Learning; *Vocational Education; Workbooks

ABSTRACT

This is the second of two parallel workbooks designed to accompany videotaped lectures on automotive repair for non-English-speaking adult students. Each of the 11 units is devoted to one aspect of auto mechanics (e.g., power tools, welding, painting). After listening to the lectures, the student is expected to complete exercises of the following types: multiple-choice, Cloze, fill-in-the-blanks, pick-a-picture, and label-the-picture. (JB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ENGLISH FOR SPECIAL PURPOSES SERIES

AUTOBODY REPAIR

HEARSAY

A LISTENING WORKBOOK

SERIES B VIDEO LECTURES

ED181733

FL010901

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ANNE MILLER

Edited by
Alfred G. Hoel

Video Lectures by
Herbert Nishii

Illustrations by
Michael Nonaka

Produced at Honolulu Community College
1977

No rights reserved. Any part of this book may be reproduced in any form or by any electronic or mechanical means by any classroom teacher for use in a classroom. No written permission from the author or publisher is necessary. This text may not be commercially sold or published. Arrangements for obtaining multiple copies of this text can be made with the Honolulu Community College Instructional Resource Center.

Produced at Honolulu Community College, 1977.

This text was developed under Comprehensive Employment and Training Act (CETA) contract number 15-6053-37 between the U.S. Department of Labor and the Office of Human Resources, City and County of Honolulu, under subcontract to Honolulu Community College.

ACKNOWLEDGMENTS

The videotapes on autobody repair, upon which the listening texts are based, were a product of the combined efforts of many individuals here at Honolulu Community College.

The initial members of the staff-- Al Hoel, Kathy Hubbard, Bill Peet, Marybeth Clark and I-- created the idea of having video-based listening materials.

Herbert Nishii, an autobody student, and part-time autobody repairman, planned the content of the video lectures and then skillfully delivered the lectures and demonstrated the autobody repair techniques before the camera. He was also my primary source of information about autobody work.

Steven Downey, also a student, set up the video equipment and did the camera work for lectures VI through XII. He then edited all of the lectures into Series A and Series B tapes, a laborious task completed with equal amounts of precision, skill and patience.

Stanley Oganeku, the director of the Autobody Repair Program here, gave us permission to use the autobody shop and equipment for some of our videotaping sessions; he and other instructors also provided us with technical information whenever Herbert Nishii was not available to answer our questions.

Katsumi Ige, the media technician for the Instructional Resource Center, arranged for our use of the IRC videotaping equipment, studio, editing room, and monitors. Bill Wiley, the director of the Instructional Resource Center, also assisted us in the production of our materials.

Sumie Ono, the director of the Learning Assistance Center, made LAC rooms available for our students and teachers to view the tapes and conduct classes.

The students with whom we used the materials gave us much valuable feedback as to the relative difficulty of the different lectures and the exercises written for the lectures.

Ofelia Berzabal, Yong-Ok Park, and Tanh Van Phan, the bilingual teachers, regularly helped the students and me in the video listening classroom, and also provided me with good advice and suggestions as to the editing of the lectures into different series.

Mike Nonaka, artist, drew the excellent pictures of the autobody tools and equipment which are included in the workbook exercises.

Sheila Mun, Fay Ishikawa, Jessiefema Figuerres, and Diane Yoshida, our typists at various times during the year, gave us dedicated service and the benefit of their fast, accurate typing skills for week upon week of non-stop typing.

Al Hoel, the coordinator of our program, encouraged me as the videotaping, materials writing, transcribing, and video editing progressed. His meticulous skills in designing a format for the materials, editing the exercises, and proofing the final typed copies of all the materials have been crucial to the quality of the finished product. His sense of humor, also, helped the entire staff to cope with the project and the simultaneous writing and teaching we handled through much of the year.

A.M.

Honolulu, Hawaii
August 1977

TABLE OF CONTENTS

Acknowledgments		iii
To The Student		vi
UNIT I	INTRODUCTION TO AUTOBODY REPAIR	1
UNIT II	HAND TOOLS	9
UNIT III	POWER TOOLS	32
UNIT IV	USE OF HAMMER AND DOLLY	46
UNIT V	PICKING AND FILING	55
UNIT VI	USE OF THE DISC GRINDER	61
UNIT VII	PLASTIC FILLING	70
UNIT VIII	WELDING	78
UNIT IX	THE SPRAY GUN	89
UNIT X	INTRODUCTION TO PAINTING	95
UNIT XI	PREPARATION FOR PAINTING	103
UNIT XII	FINAL PREPARATION AND SPOT PAINTING	111

TO THE STUDENT

These texts are designed to be used with video-taped lectures. There are two purposes for these listening materials and lectures. The primary purpose is to help you develop your ability to understand American English as it is spoken by a native speaker. A second purpose is to provide you with information on autobody repair.

Before watching each part of a video lecture for the first time, look in the workbook for the Preview and the Questions To Think About for that part of the lecture and read them. Having this information will help you understand the lecture. The Preview and Questions To Think About are translated in your translation manual. You should also look in the translation manual for the vocabulary used in that part of the lecture, and familiarize yourself with the words and meanings.

As you watch each part of the lecture for the first time, try to get the general ideas as the lecturer explains them. Please do not read your translation vocabulary or any of your other texts as you listen, since if you keep your eyes on a book you will miss the important visual aspects of the lecture and demonstrations.

After watching the video lecture part, go to the Exercises in your workbook and read them over. The translation manual contains the translations of the directions for each of the Exercises. Try to answer the questions you know, but avoid spending too much time on them: the teacher will soon play the same video lecture part over again, and you will have time later to complete the exercises.

The second time you watch the lecture, you can also glance at the Exercise questions and/or the translation vocabulary in order to listen for the answers to specific questions or to listen for particular vocabulary words. In your translation text, the list of vocabulary words are written in the order in which they are said in the lecture parts.

After listening to the video lecture a second time, finish answering the exercise questions.

When you do the Multiple Choice exercises, do not select the word choices simply according to the words you hear on the tape. You will do better if you carefully read and think about all the choices and then select the ones which make sense, based on all the information which Herbert Nishii gave in the lecture.

For the Cloze exercises, however, you will fill the blanks with the exact words you hear Herbert Nishii use in the sentences as you listen closely to the tape several times.

The Fill in the Blanks items are similar to the Cloze exercises. You can listen closely to the tape to write, word-for-word, the phrase or words you hear Herbert Nishii use in the same sentences. The main difference between the Cloze and the Fill in the Blanks exercises is that the Cloze requires you to listen for single words, but the Fill in the Blanks exercises require you to use any number of words necessary to complete the sentence.

If there is a Pick the Pictures exercise, your teacher will read the leads (questions or statements) for which you are to choose the corresponding picture(s).

For Label the Pictures exercises, however, you can simply write the name of the pictured item in the space provided under the picture. The rest of the types of exercises in your workbook are fairly simple and need no clarification.

When all of the students finish doing the exercises, the teacher will go over the exercises with the class, asking you for your answers and letting you know which answers are correct. If necessary, the teacher will explain why an answer is correct or incorrect, and/or play the same lecture part over again, so you can listen for a particular exercise answer. Do not hesitate to ask any questions you might have. If you continue to have trouble understanding any particular section of a lecture, your teacher can give you a transcript of the tape to read while you listen again to the lecture.

To get maximum benefit from your listening classes, you should: 1) make sure you understand the content of the lecture at the time you are listening to it in class; 2) periodically review the names of the tools and the repair procedures covered in earlier lectures; 3) memorize the new vocabulary found in each lecture; 4) frequently review and use all of the vocabulary so that you do not forget it.

You might find, at first, that the lectures and exercises are difficult. Please do not get discouraged! Gradually, with practice, you will begin to understand more of Herbert Nishii's speech. You will also learn how to do the exercises more easily and rapidly. Do not expect to be able to get all of the answers correct at first. The development of listening and reading skills takes time and a lot of practice, and that is a purpose for which these texts were designed.

A.M.

Honolulu, Hawaii
August, 1977

UNIT I

VIDEO LECTURE (SERIES B)

INTRODUCTION TO AUTOBODY REPAIR

PREVIEW

(Parts 1**, 2**)

Herbert Nishii tells about the kinds of work autobody repairmen do, and what those jobs consist of.

Questions To Think About:

1. What are the kinds of work autobody repairmen do?
2. What is the work of a "metal man"?
3. What is the work of a painter?

(Parts 3**, 4**)

This part of the lecture deals with pay scales and ratings, and with the expectations that your employer will probably have about the work you do in the shop.

Questions To Think About:

1. What is the lowest hourly wage earned by autobody repairmen now?
2. What is the top hourly wage?
3. What kind of work will your employer expect from you?
4. Is autobody repair an easy job?

Preview continued

(Parts 5**-7**)

This part of the lecture describes safety precautions and the safety equipment you will need as an autobody repairman.

Questions To Think About:

1. What safety equipment do you need to wear at all times?
2. What safety equipment do you need for particular jobs?
3. What is the telephone number for emergency calls?

(Parts 8**, 9**)

In this part of the lecture, Herbert Nishii describes the autobody repair working conditions, and what clothing is appropriate for the job.

Questions To Think About:

1. Will you get dirty on autobody repair jobs?
2. What kinds of dirt will get on your hands and your clothes?
3. What kind of shirt and pants should you wear?

EXERCISES

(Part 1)

Multiple Choice (TrA)

1. Autobody repair and painting is

   a. fun.
   b. fixing car bodies.
   c. basically lecturing.
   d. easy.

2. In autobody repair you have

   a. one job.
   b. two jobs.
   c. three jobs.
   d. four jobs.

3. The metal man does the

   a. repairing of damaged parts of the car.
   b. lecturing of a program.
   c. replacing of damaged parts of the car.
   d. repainting of damaged autos.

4. The painter does the

   a. replacing of damaged parts of the car.
   b. repainting of the repaired area.
   c. repairing of the car.
   d. repainting of the complete car.

(Part 2)

Cloze (TrG)

What you do in the metal work _ _ basically you pull dents, you fix frames, y _ _ know, the undercarriage of the body. You p _ _ _ _ _ _ _ _ align doors, that means you fit doors _ _, hoods. You also, later on, will probably tackle l _ _ _ _ _ collision work, or the cars you see t _ _ _ get into accidents. Those type of things. _ _ for painting, you learn to basically mix p _ _ _ _ _ to form different colors, you sand cars, tape c _ _ _ up, and you try to make the car l _ _ _ new again.

(Part 3)

Short Answer (TrC)

1. Do autobody repairmen work for somebody at one time or another?
2. How much would autobody men be paid at this time?
3. What does your pay depend upon?
4. What pay do you start out at?
5. What pay could you work your way up to?

(Part 4)

True-False (TrB)

_____ 1. Your boss wants you to perform well.

_____ 2. Your boss wants you to work fast.

_____ 3. Your boss wants to make money.

_____ 4. Your boss wants to work hard.

_____ 5. Your boss wants you to work hard.

_____ 6. Your boss wants to sweat a little bit.

_____ 7. You have to sweat a little bit.

_____ 8. You have to do easy jobs.

_____ 9. Your boss is fulfilling.

_____ 10. Autobody repair jobs can be fulfilling.

(Part 5)

Fill in the Blanks (TrD)

1. Autobody is a _____ job and a _____ job.
2. You have to have safety precautions to keep _____.
3. You need to wear _____.

Fill in the Blanks (continued)

4. The names of the masks are _____ and _____

5. The _____ is used when you work with plastic filler.

6. The _____ has two filters and it is used when you paint.

Label the Pictures (TrH)

1. _____

2. _____

(Part 6)

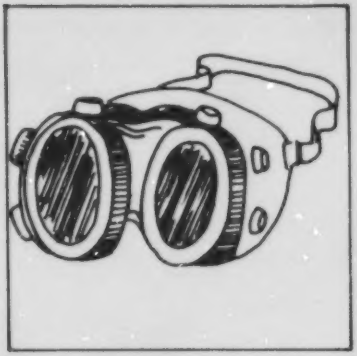
Fill in the Blanks (TrD)

1. You need eye protection, such as the _____ and the _____.

2. The _____ are used when you use the power grinder, drill, or blow gun.

3. The _____ are used when you are welding.

Label the Pictures (TrH)



1. _____ 2. _____

(Part 7)

Multiple Choice (TrA)

1. What safety precautions should you take?

a. Use plastic filler.
b. Know where the fire extinguishers are.
c. Use a blow gun.
d. Call 911 in emergencies.
e. Wear steel-toed shoes.
f. Use a power grinder.
g. Do touch-ups.

Short Answer (TrC)

1. What should you wear for foot protection?

2. What telephone number can you call for any emergency?

3. What safety equipment is used in case of fire?

Pick the Pictures (TrI)

a.

b.

1. _____
2. _____

(Part 8)

Multiple Choice (TrA)

1. What kind of job is autobody?

   a. hazardous
   b. fulfilling
   c. not dusty
   d. dirty

2. What things make the job dirty?

   a. oil
   b. dust
   c. grease
   d. paint

3. In autobody work, you also get

   a. cuts.
   b. bruises.
   c. old.
   d. scars.

4. You know you've worked well when

   a. you're dirty.
   b. you're hazardous.
   c. you have an emergency.
   d. you're beat up.

(Part 9)

Multiple Choice (TrA)

1. What kind of shirt should you wear at an autobody shop?

   a. a clean shirt
   b. a cool shirt
   c. a new shirt
   d. a comfortable shirt
   e. a light shirt
   f. a T-shirt

2. What kind of pants should you wear at an autobody shop?

   a. comfortable pants
   b. old pants
   c. pants you can throw away later
   d. clean pants

3. An autobody repairman's pants are going to

   a. get stained.
   b. get beautiful.
   c. get dusty.
   d. have holes in the knees.

UNIT II

VIDEO LECTURE (SERIES B)

HAND TOOLS

PREVIEW

(Parts 1**, 2**)

Herbert Nishii introduces the set of hammers you would find in a toolbox, and also the all-purpose dolly. He describes the finishing hammer and explains what it is used for.

Questions To Think About:

1. What are the names of the hammers?
2. What is the name of the heavy metal object used with the hammers?
3. How would you describe the appearance of the finishing hammer?
4. What is the finishing hammer used for?

(Parts 3**, 4**)

Herbert Nishii holds a picking hammer and describes its appearance and use. He then points out some features of the shrinking hammer, and explains what it is used for.

Questions To Think About:

1. What does the picking hammer look like? What is it used for?
2. What does the shrinking hammer look like? What is it used for?

Preview continued

(Parts 5**, 6**)

Herbert Nishii holds and describes the 2-pound ball-peen hammer and compares it with the other hammers. He also explains the use of the ball-peen hammer, and tells when you would use it in relation to using the other hammers for autobody repair. He then shows an all-purpose dolly and explains its uses.

Questions To Think About:

1. How does the ball-peen hammer compare in size and weight to the other hammers?
2. When would you use the ball-peen hammer in autobody repair?
3. What are two uses of the all-purpose dolly?

(Parts 7**, 8**)

Herbert Nishii shows and describes two types of pliers, drive ratchets, sockets, and extensions of different sizes, and tells what these are used for.

Questions To Think About:

1. What are the uses of the two types of pliers?
2. What are the two sizes of the drive ratchets?
3. What is the purpose of the extensions?
4. What is the purpose of the drive ratchets and sockets?

(Part 9**)

Herbert Nishii shows screwdrivers of two types and many different sizes. He describes the uses and the different shapes of the two types of screwdrivers.

Preview continued

Questions To Think About:

1. What are the two types of screwdrivers called?
2. How are the screwdrivers shaped?
3. What are they used for?

(Parts 10**, 11**)

Herbert Nishii shows a roloc disc, explains what equipment you need in order to use it, and also tells what it is used for. He then shows a wire-end brush and tells where and why it is used.

Questions To Think About:

1. What equipment do you need in order to use the roloc disc?
2. What is the roloc disc used for?
3. What equipment do you need in order to use the wire-end brush?
4. Where and why is the wire-end brush used?

(Parts 12** - 14**)

Herbert Nishii introduces a set of files used in autobody shops. He describes the appearance and uses of each file as he holds it.

Questions To Think About:

1. What does the speed file look like, and what kind of surface is it used on?
2. What does the Vixen file look like, and what kind of surface is it used on?
3. What does the Bondo file look like, and what kind of surface is it used on?

Preview continued

Questions To Think About: (continued)

4. How do you hold the speed file and the Vixen file?

5. How do you hold the Bondo file?

(Parts 15**, 16**)

Herbert Nishii holds a reverse hammer, names its different parts, and explains what it is used for and how you use it. He then shows and explains the uses of the tin-snips, the blow gun, and the measuring tape.

Questions To Think About:

1. What are the four parts of the reverse hammer?

2. What is the reverse hammer used for, and when would you need to use it?

3. What do the tin-snips resemble? What are they used for?

4. What is the blow gun used for?

5. What is the tape measure used for?

(Part 17**)

Herbert Nishii introduces the final tools in a toolbox: putty knives, plastic applicators, and a sanding block. He explains the purposes of the putty knives and plastic applicators, and describes the appearance and use of the sanding block.

Questions To Think About:

1. What are putty knives and plastic applicators used for?

2. What is another name for "plastic applicators"?

3. What would you use a sanding block for?

EXERCISES

(Part 1)

Fill in the Blanks (TrD)

1. In autobody repair and painting you're going to be carrying around a set of _____.
2. These tools are called your _____.
3. Herbert Nishii will tell you about a set of _____.
4. He will also tell you about something else, the _____.

(Part 2)

Fill in the Blanks (TrD)

1. The first hammer is a _____ hammer.
2. The finishing hammer has a _____ back.
3. The finishing hammer has a _____ face.
4. The other part of the hammer is a _____.
5. The finishing hammer is used for _____ and _____.
6. In simpler words, this hammer is used for _____ damaged metal.

(Part 3)

Multiple Choice (TrA)

1. The back of the picking hammer is

   a. slightly rounded.
   b. long.
   c. crowned.
   d. pointed.

2. The face of the picking hammer is

   a. slightly rounded.
   b. long.
   c. crowned.
   d. pointed.

Multiple Choice (continued)

3. The picking hammer is used for

a. picking up files.
b. picking up friends.
c. crowned spots.
d. picking up low spots.

4. If you have a very small, tiny dent,

a. pick it up.
b. pick it off.
c. pick it on.
d. make it crowned.

5. Your picking will leave a

a. face.
b. low spot.
c. file.
d. slight hill.

6. You will _____ _____ the slight hill.

a. file on.
b. file off.
c. file out.
d. file up.

(Part 4)

True-False (TrB)

_____ 1. The shrinking hammer face has ridges on it.

_____ 2. The shrinking hammer makes slight bulges in your metal.

_____ 3. The shrinking hammer ridges push down on certain parts of the metal and pull it in.

_____ 4. The shrinking hammer ridges pull the metal down.

_____ 5. The purpose of your shrinking hammer is to bring up slight bulges in metal.

(Part 5)

Multiple Choice (TrA)

1. The 2-pound ball-peen hammer is

a. a dolly.
b. a heavy hammer.
c. the biggest hammer.
d. easily recognizable.

Multiple Choice (continued)

2. The 2-pound ball-peen hammer is used for

   a. shrinking metal.
   b. roughing out large dents.
   c. picking up dents.
   d. bumping and dinging.

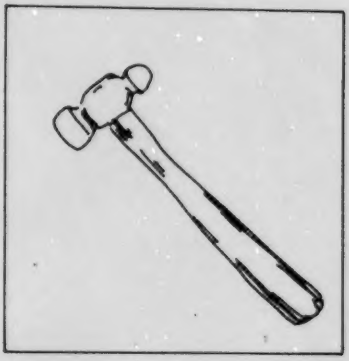
3. After you use the 2-pound ball-peen hammer, you can

   a. bump and ding.
   b. damage the metal.
   c. use the other hammers.
   d. use a bigger hammer.

Pick the Pictures (TrI)

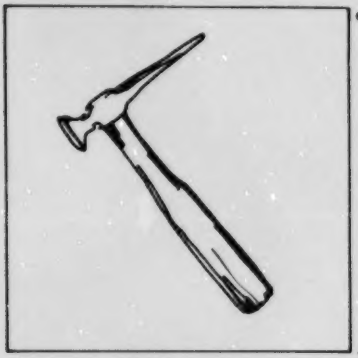
a.

b.



Pick the Pictures (TrI)

c.



d.

1. _____
2. _____

3. _____
4. _____

(Part 6)

Multiple Choice (TrA)

1. Another name for all-purpose dolly is

   a. pulling dolly.
   b. shrinking dolly.
   c. high crown dolly.
   d. picking dolly.

2. The all-purpose dolly is used with the hammers for

   a. smoothening out metal.
   b. shrinking the metal.
   c. picking up small dents.
   d. bulging up the metal.

3. The all-purpose dolly is also used for

   a. filing metal.
   b. roughing out metal.
   c. pulling in metal.
   d. making ridges in metal.

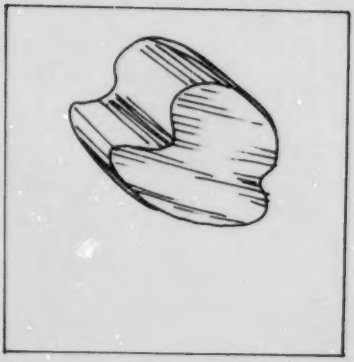
4. "Roughing out" means

   a. hitting out major dents.
   b. finishing.
   c. bumping and dinging.
   d. rounding out.

(Part 7)

Label the Fictures (TrH)

1. _____



2. _____

3. _____

4. _____

Label the Pictures (continued)

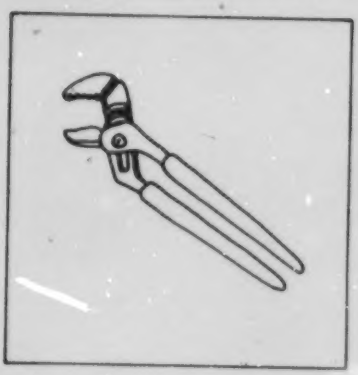
5. _____

Fill in the Blanks (TrD)

1. The water-pump pliers and the regular pliers are used for _____ things and _____ things.

2. You can even use pliers to _____ things.

Label the Pictures (TrH)



1. _____

2. _____

(Part 8)

Multiple Choice (TrA)

1. The two sizes of Herbert Nishii's drive ratchets are

   a. half-inch.
   b. quarter-inch.
   c. three-eighths inch.
   d. one-inch.

2. The extensions are used when you want

   a. to make the ratchet smaller.
   b. to have a longer reach at things.
   c. to use a smaller ratchet.
   d. to remove sockets.

3. The uses of the drive ratchets and sockets are

   a. removing nuts and bolts.
   b. putting on nuts and bolts.
   c. taking off nuts and bolts.
   d. smoothening nuts and bolts.

Multiple Choice (continued)

4. The ratchets and sockets are made in different sizes

   a. for different sized hammers.
   b. for different sized jobs.
   c. for different sized pliers.
   d. for different sized nuts and bolts.

Label the Pictures (TrH)

1. _____

2. _____

Label the Pictures (continued)

3. _____

(Part 9)

Multiple Choice (TrA)

1. Regular screwdrivers have tips which are

   a. flat.
   b. square.
   c. pointed.
   d. wedge-shaped.

2. Phillips screwdrivers have tips which are

   a. flat.
   b. square.
   c. pointed.
   d. wedge-shaped.

3. Screwdrivers are used for

   a. removing screws.
   b. taking off screws.
   c. putting on screws.
   d. filing.

4. The standard screwdrivers can remove

   a. standard hammers.
   b. standard screws.
   c. phillips screws.
   d. any screws.

Multiple Choice (continued)

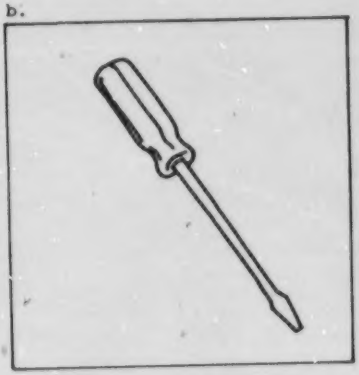
5. The phillips screwdriver can remove

a. standard hammers.
b. standard screws.
c. phillips screws.
d. any screws.

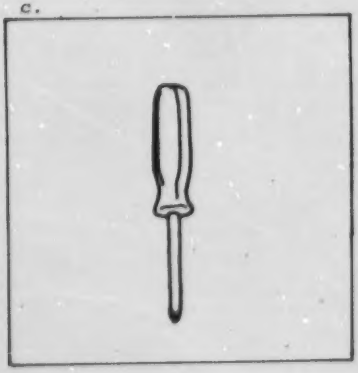
Pick the Pictures (TrI)

a.

b.



c.



d.

1. _____
2. _____

3. _____
4. _____

(Part 10)

Multiple Choice (TrA)

1. A roloc disc is used with

   a. a standard type of screwdriver.
   b. a special type of screw.
   c. a regular hand drill.
   d. a specially designed type of sandpaper.

2. To use the roloc disc, you put it into the

   a. drive ratchet.
   b. drill chuck.
   c. sandpaper.
   d. ratchet extension.

3. A roloc disc is used to

   a. grind in tight corners.
   b. grind in small spaces.
   c. sand off paint.
   d. clean out rust.

(Part 11)

Fill in the Blanks (TrD)

1. The disc grinder, roloc disc, and _____ are all used to remove rust.

2. You use the wire-end brush where the disc grinders and the roloc disc _____.

3. You need a _____ to use the wire-end brush.

4. Another way to say "remove rust" is "_____ rust."

Label the Pictures (TrH)

1. _____ 2. _____

(Part 12)

Multiple Choice (TrA)

1. How many files are there in the hand tools?

   a. one
   b. two
   c. three
   d. four

2. The speed file is

   a. long.
   b. flat.
   c. wide.
   d. narrow.

3. The speed file is

   a. hard to use.
   b. easy to handle.
   c. not easy to handle.
   d. comfortable to hold.

4. You need to put _____ on the speed file.

   a. sheets of paint
   b. water
   c. sheets of sandpaper
   d. sheets of metal

Multiple Choice (continued)

5. The speed file is used to

a. cut the plastic filler.
b. cut the high spots off the metal.
c. sand the plastic filler.
d. reveal high and low spots in plastic filler.
e. reveal high and low spots in metal.
f. make plastic filler smooth.

(Part 13)

Multiple Choice (TrA)

1. The Vixen file is made out of

a. plastic filler.
b. metal.
c. cloth.
d. plastic.

2. The Vixen file is

a. wide.
b. flat.
c. narrow.
d. sharp.

3. The Vixen file is used like

a. the speed file.
b. the roloc disc.
c. the screwdriver.
d. the ratchets.

4. The Vixen file is used on

a. wood.
b. plastic filler.
c. paint.
d. metal.

5. The Vixen file is used to

a. shape plastic filler.
b. smoothen metal.
c. cut down high spots on metal.
d. reveal low spots on metal.

(Part 14)

Multiple Choice (TrA)

1. The Bondo file looks

   a. like a cheese grater.
   b. very wide.
   c. like a Vixen file.
   d. like a sanding block.

2. You can buy _____ or _____ Bondo files.

   a. square
   b. slightly round
   c. circular
   d. flat

3. The Bondo file is used for

   a. shaping plastic filler.
   b. cutting plastic filler.
   c. cutting metal.
   d. smoothening metal.

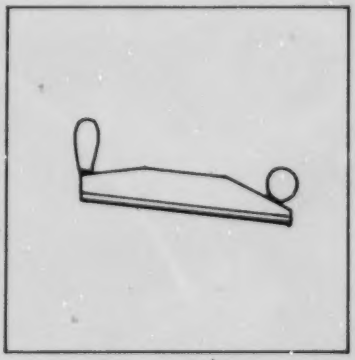
4. You shape the plastic filler when it

   a. is not that hard.
   b. is not that soft.
   c. looks like metal.
   d. is very soft.

Pick the Pictures (TrI)

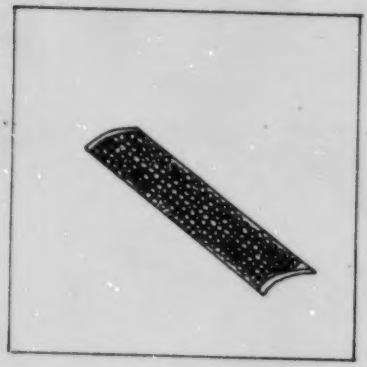
a.

b.



Pick the Pictures (continued)

c.



1. _____
2. _____
3. _____

(Part 15)

Short Answer (TrC)

1. Name the four parts of the reverse hammer.

Number in Order (TrE)

To pull out a dent with a reverse hammer, you

____ screw the end into the hole in the dent.

_____ slide the weight along the shaft.

_____ drill a hole into a dent.

_____ pull the dent out.

Multiple Choice (TrA)

1. You use a reverse hammer when

   a. the dent is big.
   b. you cannot reach behind the dent.
   c. your dolly pushes the dent out.
   d. you can't hammer the dent from the inside.

(Part 16)

Multiple Choice (TrA)

1. The tin-snips look like

   a. very large scissors.
   b. Bondo files.
   c. blow guns.
   d. gardening shears.

2. The tin-snips are

   a. plastic scissors
   b. large scissors.
   c. specially made scissors.
   d. safety scissors.

3. The tin-snips are used for

   a. cutting hair.
   b. cutting metal.
   c. pulling dents.
   d. hammering.

4. The blow gun is connected to a

   a. disc grinder.
   b. line.
   c. compressor.
   d. ratchet.

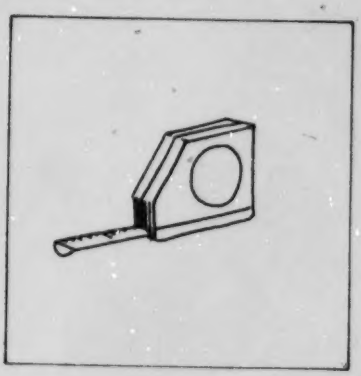
5. The blow gun is used to

   a. clean things off.
   b. blow air.
   c. cut metal.
   d. dry things.

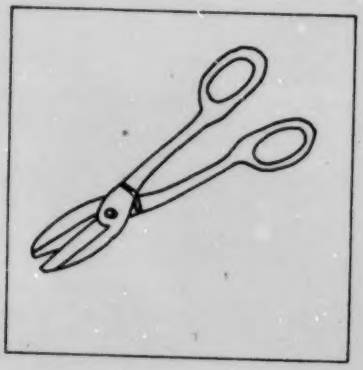
6. The tape measure is used to

   a. measure air.
   b. measure paint.
   c. measure distance.
   d. measure time.

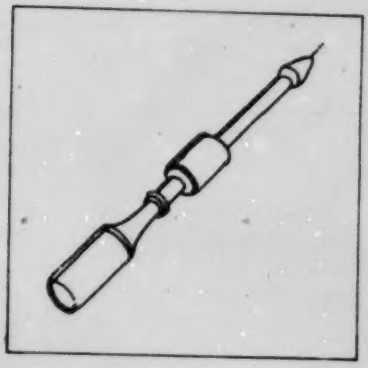
Label the Pictures (TrH)



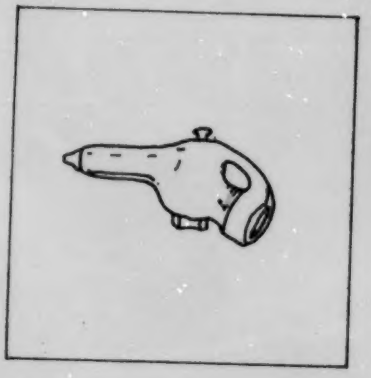
1. _____



2. _____



3. _____



4. _____

(Part 17)

Multiple Choice (TrA)

1. Putty knives and plastic applicators are used for

   a. mixing plastic filler.
   b. sanding plastic filler.
   c. pulling dents.
   d. applying plastic filler.

2. Another name for plastic applicator is

   a. putty knife.
   b. sanding block.
   c. squee-gee.
   d. plastic filler.

3. The sanding block is

   a. heavy.
   b. flexible.
   c. flat.
   d. easily used.

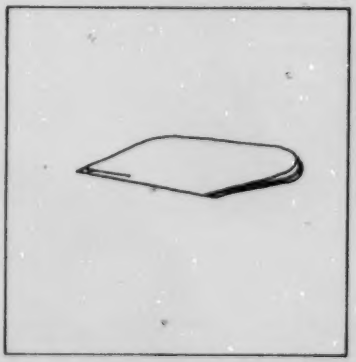
4. A sanding block is used for

   a. sanding plastic filler.
   b. making smooth surfaces.
   c. making smooth hands.
   d. making presentable surfaces.

Pick the Pictures (TrI).

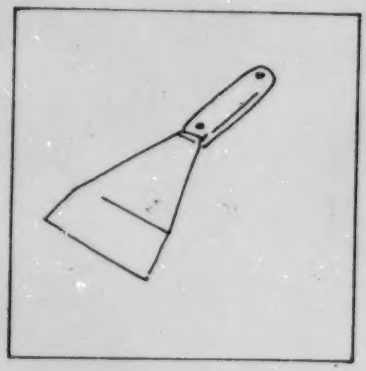
a.

b.



Pick the Pictures (continued)

c.



1. _____
2. _____
3. _____

UNIT III

VIDEO LECTURE (SERIES B)

POWER TOOLS

PREVIEW

(Part 1**)

In his introduction to power tools, Herbert Nishii explains what the power sources are, and why power tools are potentially dangerous to use.

Questions To Think About:

1. What are the power sources of power tools?
2. What is a danger of power tools which are run by electricity?
3. When you use power tools, what is one thing you can do to reduce the danger?

(Parts 2** - 4**)

Herbert Nishii shows two types of disc grinders. He explains the respective power sources, parts, sizes and weights, and functions of both types of grinders. He also tells what the grinders are used for in autobody shops.

Questions To Think About:

1. What is the power source of the larger disc grinder?
2. Where is the on-and-off switch on the larger grinder?
3. How much does the larger disc grinder weigh?
4. How fast does a disc rotate?
5. What is the power source of the smaller disc grinder?
6. Where is the on-and-off switch on the smaller disc grinder?

Preview continued

(Parts 5** - 7**)

Herbert Nishii shows two types of orbital sanders. He explains how you hold each one, what the purposes or uses of the orbital sanders are, and what sandpaper you need to use with both orbital sanders.

Questions To Think About:

1. What are the two types of orbital sanders?
2. What is one use for the orbital sanders?
3. What is another name for "orbital sander"?
4. What is needed in order to use these tools?
5. How do you turn on the rectangular orbital sander?
6. What is another use for the orbital sanders?

(Part 8**)

In this part of the lecture, Herbert Nishii describes the straight-line sander. He tells how to hold it, mentions a tool it resembles, and tells what the power source is. He also tells the size, weight, and purpose of the straight-line sander.

Questions To Think About:

1. How do you hold the straight-line sander?
2. What is the power source of this tool?
3. What is the purpose of this tool?

Preview continued

(Part 9**)

Herbert Nishii shows two types of polishers (or air buffers). He compares the size of the larger buffer with the disc grinder. and he also compares their rotation speeds. He tells what the polishing heads are made of, and what the uses of the buffers are. He then shows two types of air wrenches, and tells what their purpose is.

Questions To Think About:

1. Which air buffer resembles the disc grinder?
2. How fast do the air buffers spin?
3. How fast does the disc grinder spin?
4. What is the purpose of the polishers?
5. What are the two shapes of the air wrenches?
6. What is the main use of the air wrenches?

(Part 10**)

Herbert Nishii explains the zip gun (panel cutter) and the attachments for it which you can use for various purposes. He shows a drawing on the blackboard of what the attachment for cutting metal would look like.

Questions To Think About:

1. What is the basic use of the zip gun?
2. With other attachments, what other things can you do with the zip gun?

EXERCISES

(Part 1)

Multiple Choice (TrA)

1. Power tools are run on

   a. sunlight.
   b. air.
   c. electricity.
   d. water.

2. You have to be careful with your power tools because

   a. they are convenient.
   b. they are all grinders.
   c. they are hazardous.
   d. they are water-powered.

3. Electrical currents could

   a. abuse any of the tools.
   b. give you a shock.
   c. run on your air lines.
   d. be in working order.

4. Air tools

   a. are careful.
   b. are powerful.
   c. run on air lines from a shop compressor.
   d. are good to breathe.

5. Air tools are dangerous because

   a. air produces a lot of power.
   b. air runs on electricity.
   c. air is dangerous.
   d. air gives a shock.

6. When you use power tools,

   a. wear gloves.
   b. run away.
   c. do not abuse them.
   d. be careful.

(Part 2)

Fill in the Blanks (TrD)

1. The first tools Herbert Nishii will talk about will be the various _____.

2. On the larger disc grinders there are two _____.

3. The power source of the larger disc grinder is _____.

Fill in the Blanks (continued)

4. The larger disc grinder has an on-and-off switch on a _____.

5. The smaller disc grinder has a _____ type on-and-off switch.

6. The larger disc grinder has a handle that you can _____ to either side of the tool.

(Part 3)

Short Answer (TrC)

1. How long is the larger disc grinder?

2. How much does the larger disc grinder weigh?

3. Why do you need to use the larger disc grinder properly?

4. The sanding disc rotates at what speed?

5. If the moving disc touches you, what will happen?

(Part 4)

True-False (TrB)

_____ 1. The small, compact grinder has a pistol grip.

_____ 2. The small grinder has a trigger.

_____ 3. The small grinder runs on electricity.

_____ 4. The small grinder weighs about 2 to 3 pounds.

_____ 5. The small grinder is about 7 feet long.

Fill in the Blanks (TrD)

1. The disc grinders are used for removing _____, removing _____, and smoothening _____ in your metal.

2. The disc grinders are also used to locate _____ in your metal.

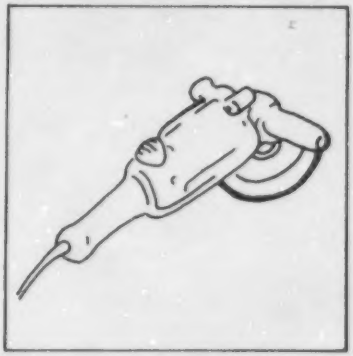
Fill in the Blanks (continued)

3. Also, the disc grinder is used to smoothen a metal called _____, which is sometimes used for filling up _____.

Pick the Pictures (TrI)

a.

b.



1. _____
2. _____

(Part 5)

Multiple Choice (TrA)

1. The two types of orbital sanders are the

   a. round type.
   b. rectangular type.
   c. square type.
   d. triangular type.

2. Orbital sanders are used for

   a. feather-edging.
   b. painting a metal surface.
   c. making circles.
   d. tapering the paint to make a smooth surface from the old paint to the bare metal.

Multiple Choice (continued)

3. The feather-edged surface

a. is smooth.
b. is tapered paint.
c. has a big step.
d. is tapered metal.

(Part 6)

Short Answer (TrC)

1. What is another name for the orbital sander?

2. How big is the rectangular orbital sander?

3. What do you use with the orbital sander?

4. Where is the on-and-off switch on the rectangular orbital sander?

5. How do you turn the rectangular orbital sander on?

6. How do you hold the round orbital sander?

(Part 7)

Fill in the Blanks (TrD)

1. Another purpose of the orbital sander is to use it with _____.

2. After you cut the plastic filler with Bondo files, you use the orbital sander to make a _____ job, a very _____ surface.

3. You don't want any _____ or _____ in your plastic filler.

4. So, besides feather-edging, they're used for _____ and _____ plastic filler.

(Part 8)

Fill in the Blanks (TrD)

1. This tool is used for _____.

Fill in the Blanks (continued)

2. This tool is called the _____.

3. You use _____ hands to hold it.

4. One hand grips the _____ and the other hand holds the _____.

5. The straight-line sander resembles the _____.

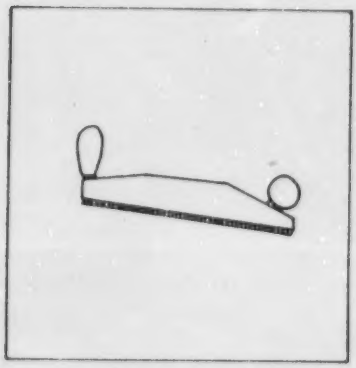
6. The straight-line sander is powered by _____, but the speed file is a hand tool which is powered by _____.

7. The straight-line sander is about _____ inches wide and _____ inches long.

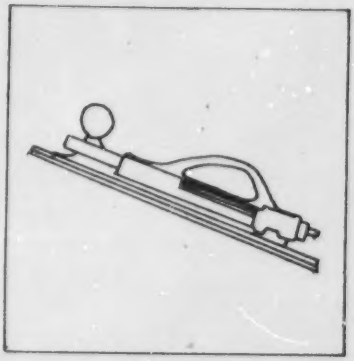
8. The straight-line sander weighs about _____ pounds.

9. Again, the purpose of the straight-line sander is _____.

Label the Pictures (TrH)



1. _____



2. _____

(Part 9)

Multiple Choice (TrA)

1. The polishers are also called

   a. portions.
   b. air buffers.
   c. electric grinders.
   d. compounders.

2. The larger polisher resembles

   a. the smaller one.
   b. a disc grinder.
   c. an orbital sander.
   d. a straight-line sander.

3. The polishers spin at about

   a. 4,000 - 5,500 r.p.m.
   b. 2,500 - 3,000 r.p.m.
   c. 25,000 - 30,000 r.p.m.
   d. 3,000 - 4,500 r.p.m.

4. The polishers spin _____ the electric grinders.

   a. slower than
   b. faster than
   c. at the same speed as
   d. at double the speed of

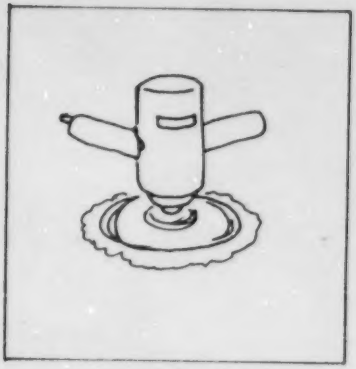
5. The polisher heads are made of

   a. cloth.
   b. polish.
   c. wool.
   d. sandpaper.

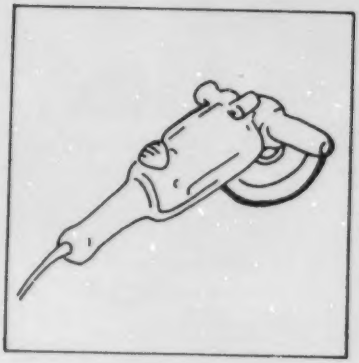
6. The polishers are used for

   a. compounding cars.
   b. shining shoes.
   c. painting cars.
   d. polishing cars after painting them.

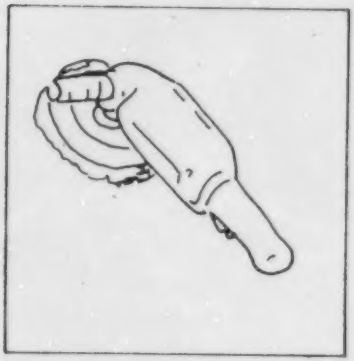
Label the Pictures (TrH)



1. _____



2. _____



3. _____

Multiple Choice (TrA)

1. Air wrenches come in

   a. ratchet shapes.
   b. pistol shapes.
   c. hand-form shapes.
   d. square shapes.

2. You use air wrenches to

   a. remove nuts and bolts faster.
   b. remove air tools.
   c. remove the air.
   d. remove the shapes.

(Part 10)

Multiple Choice (TrA)

1. This tool is mainly used for

   a. cutting panels.
   b. cutting metal.
   c. separating welded metal.
   d. welding metal.

2. What are two names for this tool?

   a. final tool
   b. panel cutter
   c. zip gun
   d. attachments

3. To use the zip gun you need

   a. welds.
   b. attachments.
   c. hammers.
   d. illustrations.

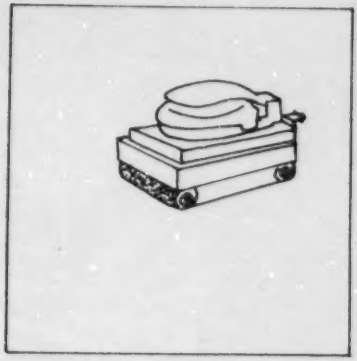
4. With the zip gun you can also

   a. hammer things.
   b. screw things.
   c. fry eggs.
   d. smash things.

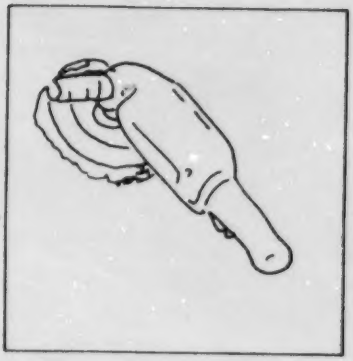
5. The zip gun attachment for cutting metal is

   a. thick.
   b. bulky.
   c. sharp.
   d. heavy.

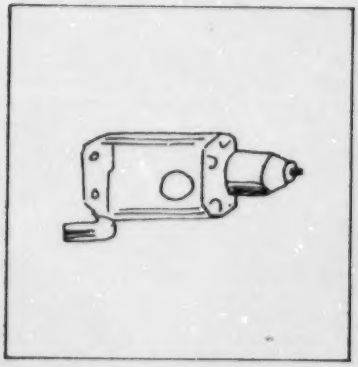
Label the Pictures (TrH)



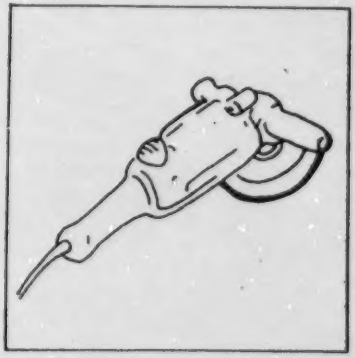
1. _____



2. _____

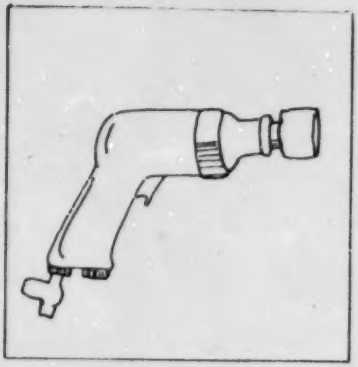


3. _____

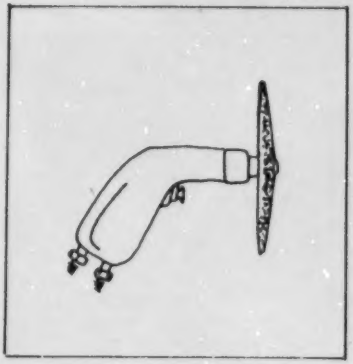


4. _____

Label the Pictures (continued)

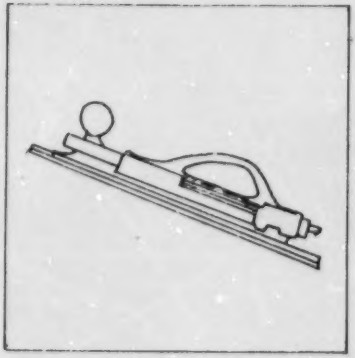


5. _____



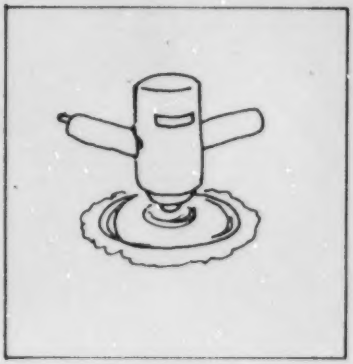
6. _____

7. _____

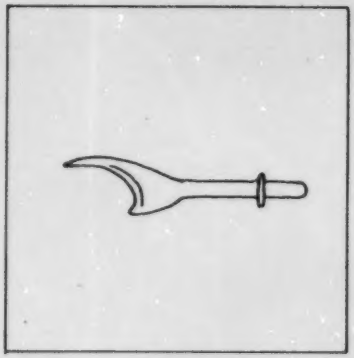


8. _____

Label the Pictures (continued)



9. _____



10. _____

UNIT IV

VIDEO LECTURE (SERIES B)

USE OF HAMMER AND DOLLY

PREVIEW

(Parts 1**-3**)

Herbert Nishii, introduces the lecture, explains the proper way to hold the finishing hammer, and he also shows how to control the motion of the hammer when doing body and fender work.

Questions To Think About:

1. What tools will you use in metal bumping and dinging?
2. How do you hold a hammer when you pound nails?
3. How should you hold your hammer for body and fender work?

(Parts 4**-6**)

In this part of the lecture, Herbert Nishii explains how to hold the dolly and demonstrates the hammer-on-dolly technique.

Questions To Think About:

1. How do you hold the dolly?
2. For hammer-on-dolly technique, where do you place the dolly?
3. Why does the metal bulge sometimes when you hammer-on-dolly?
4. How can you prevent the metal from bulging?

Preview continued

(Part 7**)

In this part, Herbert Nishii demonstrates the hammer-off-dolly technique in metal bumping and dinging.

Questions To Think About:

1. For hammer-off-dolly, where do you place the dolly?
2. When you hammer-off-dolly, do you bounce the dolly?
3. What is the purpose of the hammer-off-dolly technique?

(Part 8**)

This part shows some illustrations of the positions of the hammer and dolly for the hammer-on-dolly and hammer-off-dolly techniques.

Questions To Think About:

1. How do you position the tools for hammer-on-dolly technique?
2. How do you position the tools for hammer-off-dolly technique?

EXERCISES

(Part 1)

Multiple Choice (TrA)

1. For metal bumping and dinging you use _____ tools.

   a. one
   b. two
   c. three
   d. four

2. The tools which you use for metal bumping and dinging are the

   a. file.
   b. screwdriver.
   c. hammer.
   d. dolly.

3. Metal bumping and dinging is also called

   a. autobody operation.
   b. bumping operation.
   c. hammer-on-dolly operation.
   d. pulling operation.

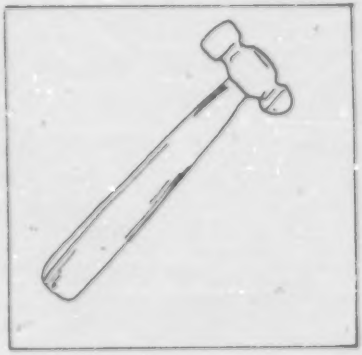
4. In this lecture, Herbert Nishii will show how to

   a. use the hammer properly.
   b. like autobody work.
   c. lecture about metal.
   d. use the dolly properly.

Pick the Pictures (TrI)

a.

b.



Pick the Pictures (continued)

c.

1. _____

(Part 2)

Cloze (TrG)

First, the hammer. You notice I'm _ _ _ _ _ the basic finishing hammer I showed y _ _ that we have in the toolbox. _ _ _ _, when you folks hammer at h _ _ _ (you know) pounding nails, like that, you usually (you know) g _ _ _ the hammer tight and you pound _ _ _ _ at your tool -- your nail, r _ _ _ _? You do that, you just grab t _ _ hammer real hard, pound on the n _ _ _, and you get the work d _ _ _, right? Well, in body and fender w _ _ _, you don't just grip the hammer r _ _ _ hard and pound. You have to c _ _ _ _ _ _ your hammer.

(Part 3)

Multiple Choice (TrA)

1. In body and fender work, you have to control your hammer

   a. through your wrist.
   b. through your palm.
   c. through your arm.
   d. through your fingertips.

2. You should hold the finishing hammer handle

   a. in your palm.
   b. between your thumb and fingertips.
   c. in the back of your palm.
   d. with your wrist.

3. As you hammer, the finishing hammer handle should

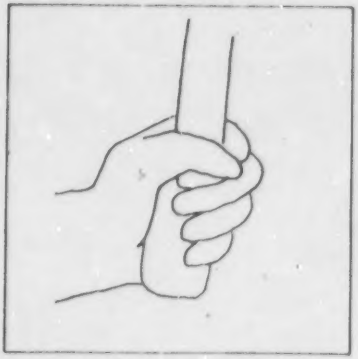
   a. not move.
   b. hit the back of your palm.
   c. hit your thumb.
   d. pound your nail.

4. If you don't want much power, you can just

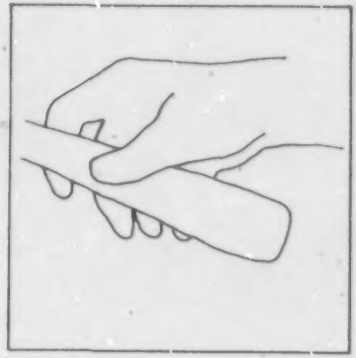
   a. use your fingers.
   b. use your wrist and fingers.
   c. use your whole arm.
   d. use your thumb.

Pick the Pictures (TrI)

a.



b.



1. _____
2. _____

(Part 4)

True-False (TrB)

_____ 1. "Dolly block" is another name for the high crown dolly.

_____ 2. When you hammer metal, you should use only the high crown of the dolly.

_____ 3. When you hammer metal, you should use any part of the dolly.

_____ 4. When you hammer the flat side of the fender, you should use the round part of the dolly.

_____ 5. When you hammer on a corner area, you should use the part of the dolly which is shaped like a corner.

_____ 6. You should use the part of the dolly that conforms to the shape of the fender or body.

_____ 7. You should hold the dolly with two hands.

_____ 8. You should not change your hand position.

(Part 5)

Multiple Choice (TrA)

1. The two basic operations with a dolly are

   a. hammer-in-dolly.
   b. hammer-on-dolly.
   c. hammer-by-dolly.
   d. hammer-off-dolly.

2. When you hammer-on-dolly, you

   a. put the dolly under the low spot of the metal.
   b. put the dolly behind the raised area of the metal.
   c. put the dolly and hammer under the metal.
   d. hammer the metal onto the dolly.

3. When you hammer-on-dolly, you should

   a. sometimes feel the contour of the body.
   b. not listen to the sound of the hammer.
   c. check to see how well the metal is shaping up.
   d. check the dots.

(Part 6)

Multiple Choice (TrA)

1. As you hammer-on-dolly, the metal will bulge if you

   a. bounce the dolly.
   b. don't bounce the dolly.
   c. feel comfortable.
   d. hold the dolly in place.

2. When you hammer-on-dolly, you should

   a. let the dolly spring back with the blow of the hammer.
   b. not bounce the dolly.
   c. stretch the metal.
   d. bounce your dolly.

(Part 7)

Multiple Choice (TrA)

1. In this part of the lecture, Herbert Nishii will talk about

   a. hammer-by-dolly.
   b. hammer-on-dolly.
   c. hammer-off-dolly.
   d. hammers and dollies.

2. A high spot of the metal is

   a. an area of raised metal.
   b. a ridge in the metal.
   c. plastic filler.
   d. a low area in the metal.

3. The purpose of hammer-off-dolly is to

   a. find a low spot.
   b. hammer a high spot down.
   c. push a low spot up.
   d. make a slight ridge.

4. For hammer-off-dolly, you

   a. place the dolly behind the low spot.
   b. push the dolly up.
   c. use a springing action with the dolly.
   d. hammer on the high spot.
   e. hammer with the dolly.

5. When you are finished hammering-off-dolly,

   a. the high spot is lower.
   b. the high spot is bigger.
   c. the low spot is higher.
   d. the low spot is lower.
   e. the whole metal area is higher.

Multiple Choice (continued)

6. The sound of the hammer-off-dolly is _____ the sound of the hammer-on-dolly.

   a. higher than
   b. lower than
   c. the same as

7. After you finish hammer-off-dolly or hammer-on-dolly, you can

   a. plastic fill.
   b. grind the metal.
   c. dent the metal.
   d. pull the dents.

(Part 8)

Fill in the Blanks (TrD)

1. For hammer-on-dolly, you place the dolly behind the _____ spot.

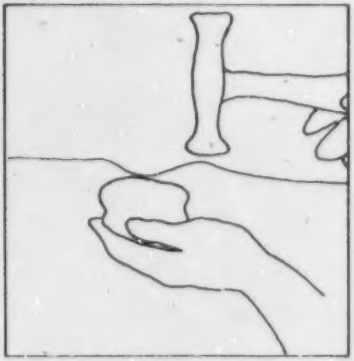
2. For hammer-off-dolly, you place the dolly behind the _____ spot.

3. For hammer-off-dolly and hammer-on-dolly, you hammer directly onto the _____ spot.

4. For hammer-off-dolly, you _____ the dolly.

Pick the Pictures (TrI)

a.



b.

1. _____
2. _____

UNIT V

VIDEO LECTURE (SERIES B)

PICKING AND FILING

PREVIEW

(Part 1**)

In this part of the lecture, Herbert Nishii introduces the picking and filing operation. He also tells which tools are used for this technique, and tells when and why picking and filing is done.

Questions To Think About:

1. What are the parts of the pick hammer?
2. What are the parts of the Vixen file?
3. Is picking and filing often done in autobody shops?

(Parts 2**, 3**)

In this part of the lecture, Herbert Nishii shows how to hold and use the picking hammer to pick up a dent.

Questions To Think About:

1. What is the correct way to hold the pick hammer?
2. How do you find the correct spot for picking?

Preview continued

(Parts 4**, 5**)

In this part of the lecture, herbert Nishii explains the use of the Vixen file for filing the area which was picked up. This process permits you to make a smooth metal surface without usirg plastic filler.

Questions To Think About:

1. What is the correct way to hold the Vixen file?
2. What does the blade of the Vixen file look like?
3. Why don't you need plastic filler?

V

EXERCISES

(Part 1)

Short Answer (TrC)

1. What is this technique called?
2. What kind of job does this technique create?
3. What tools will you use?
4. What part of the hammer will you use?
5. What part of the Vixen file do you hold?
6. What part of the file does the cutting?
7. What cars would need this technique?
8. Is this technique often used in autobody shops?

(Part 2)

Multiple Choice (TrA)

1. When you hold the pick hammer, your index finger

   a. points to the hammer head.
   b. points to your thumb.
   c. shakes.
   d. cradles the handle.

2. When you hold the pick hammer, your other fingers and your thumb

   a. cradle the handle.
   b. point to the fender.
   c. hit the sheet metal.
   d. move.

3. When you hammer, you

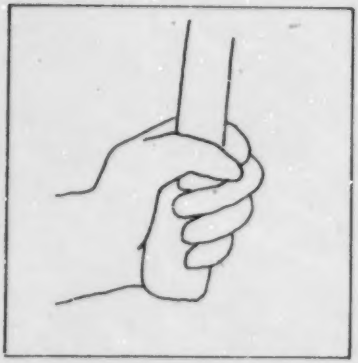
   a. move your toes.
   b. move your fingers.
   c. move your arm.
   d. move your wrist.

4. When you use your pick hammer, you make believe

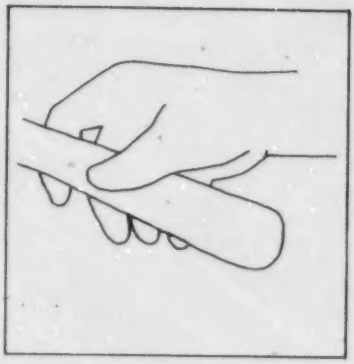
   a. it is a shrinking hammer.
   b. it is a friend.
   c. it is an extension of your hand.
   d. it is your thumb.

Pick the Pictures (TrI)

a.



b.



c.

1. _____

(Part 3)

True-False (TrB)

_____ 1. You use a pick hammer to make pimples in the metal.

True-False (continued)

_____ 2. You use a pick hammer to make an X.

_____ 3. Another name for "pimples" is "slight hills".

Number in Order (TrE)

To pick up an area, you

_____ pick up.

_____ tap the pick hammer underneath the area.

_____ feel the area you want to pick.

_____ feel the vibrations directly under your fingers.

(Part 4)

Fill in the Blanks (TrD)

1. The Vixen file is used to _____ the pimples in the sheet metal.

2. You use the Vixen file by _____ or _____.

3. The Vixen file blade has _____ and _____.

4. The ridges on the blade all _____ in one direction.

5. The direction that the ridges curve is the direction you should _____ or _____ the file.

6. The direction that the ridges curve is the direction that the file _____.

(Part 5)

Multiple Choice (TrA)

1. When you file in one direction and then in another direction, you are

   a. back-filing.
   b. opposite-filing.
   c. front-filing.
   d. cross-filing.

Multiple Choice (continued)

2. Picking and filing is called a "quality job" because

   a. you pick up all the low spots.
   b. you create a smooth finish with the metal itself.
   c. you use no plastic filler.
   d. you do a nice job.

Short Answer (TrC)

1. To finish the picking and filing job, what will Herbert Nishii have to do?

2. How will Herbert Nishii know when all the low spots have been picked up.

3. Why does picking and filing demand a lot of patience?

UNIT VI

VIDEO LECTURE (SERIES B)

USE OF THE DISC GRINDER

PREVIEW

(Part 1**)

In this part of the lecture, Herbert Nishii gives an introduction to the lecture. He then describes the disc grinder, tells what it is used for, and names the parts of the grinder.

Questions To Think About:

1. Is an electric disc grinder a dangerous machine?

2. What are the uses of the disc grinder?

3. What are the different parts of the disc grinder?

(Parts 2**-5**)

In this part of the lecture, Herbert Nishii tells about and shows the various abrasive discs used with the disc grinder. He then tells what kinds of jobs the different discs are used for.

Herbert Nishii then demonstrates how to put a disc on the disc grinder backing pad.

Then the two methods of grinding are explained. The method for smoothening the metal to produce a quality job is explained in detail first.

Then the other method for using the disc grinder is explained. This method is used to create a rough surface on the metal for plastic filler to adhere to.

Questions To Think About:

1. What are the three types of discs used in autobody shops?

2. What is the number of the grit for each type of disc?

3. How do you put a disc on the grinder?

Preview continued

Questions To Think About: (continued)

4. How many discs do you need when your purpose is to smoothen the metal and not use plastic filler?

5. How many discs do you need when your purpose is to roughen the surface in order to use plastic filler on it?

(Parts 6**-10**)

In this part of the lecture, Herbert Nishii tells you first about safety measures necessary when using the disc grinder. He mentions how to protect yourself from the dangerous cutting edge, the electrical current and cord, and how to protect your face and eyes from pieces of metal and paint thrown from the grinding surface.

He also demonstrates both grinding techniques-- the one for smoothening the metal for a quality job, and then the one for roughening the metal (in order to apply plastic filler on it later). He also tells you how to avoid warping the panels as you grind.

Questions To Think About:

1. How fast does the disc of the disc grinder rotate?

2. How can you reduce the possibility of getting shocked?

3. What is the purpose of the safety shield?

4. When you grind the metal for a quality smoothening job, how much of the disc do you use?

5. When you grind the metal to roughen it, how much of the disc do you use?

6. Why should you feel the metal occasionally as you grind?

EXERCISES

(Part 1)

Multiple Choice (TrA)

1. The disc grinder is

a. large.
b. heavy.
c. narrow.
d. bulky.
e. dangerous.
f. handy.

2. Herbert Nishii's disc grinder is run by

a. air.
b. electricity.
c. water.
d. gasoline.

3. A disc grinder is used to

a. remove bolts.
b. remove rust.
c. take off paint.
d. locate low spots.
e. smoothen metal.

Short Answer (TrC)

1. Name seven parts of the disc grinder.

(Part 2)

Multiple Choice (TrA)

1. What are three types of abrasive discs?

a. fine
b. smooth
c. medium
d. coarse

2. The 16-grit disc is used for creating a

a. rough surface.
b. fine surface.
c. smooth surface.
d. nice job.

3. The 16-grit disc is used

a. to remove paint.
b. before using plastic filler.
c. on anyone.
d. on bumpers.

Draw Lines (TrF)

36-grit	medium grit
16-grit	heavy grit
24-grit	fine grit

Multiple Choice (TrA)

1. The 24-grit disc is

   a. used for grinding bumpers.
   b. used for picking up metal.
   c. used like the 16-grit disc.
   d. finer than the 16-grit disc.

2. The 36-grit disc is used for

   a. grinding hoods.
   b. polishing paint.
   c. removing paint.
   d. grinding bumpers before re-chroming.

(Part 3)

Number in Order (TrE)

To put a disc on a grinder, you

_____ put the lock unit back into the center.

_____ remove the lock unit.

_____ tighten the lock unit.

_____ turn the backing pad.

_____ put your disc on the backing pad.

_____ hold the back of the grinder.

_____ take off the backing pad.

_____ put the backing pad on the grinder.

(Part 4)

Cloze (TrC)

Basically also, you have two t _ _ _ _ of grinding, where you're gonna s _ _ _ _ with a rough to a f _ _ _, or you just stay with t _ _ rough. When you sand from _ rough surface and you go t _ a smoother, say that you're g _ _ _ _ use your 16 grit, and y _ _'_ _ gonna sand some metal, grind m _ _ _ _ down, gonna use your 16 g _ _ _, and then you're gonna go w _ _ _ your 24, then you go w _ _ _ your 36. That way it's _ _ _ metal, no plastic filler whatsoever, n _ fill. You're just using the m _ _ _ _ itself and creating a quality j _ _. When you do it that way, what you have to do _ _ try to use as much _ _ _ _ of the grinding disc as p _ _ _ _ _ _ _. So that when it's on t _ _ surface, it's almost flat, this g _ _ _ _ _ _ _ disc is almost flat except f _ _ maybe about 5 to 25 d _ _ _ _ _ _ -- elevated in the back or _ _ the side.

Multiple Choice (TrA)

1. The two types of grinding are

   a. sanding from a rough surface to a fine surface.
   b. starting again.
   c. sanding from a fine to a medium surface.
   d. staying with a rough surface.

2. When you sand a rough surface to a smoother surface,

   a. you stay with the rough sandpaper.
   b. you use the 16-grit, then 24-grit, then 36-grit sandpaper.
   c. you will use plastic filler.
   d. you won't use plastic filler.

Multiple Choice (continued)

3. When you sand a rough surface to a smoother surface,

   a. you are creating a quality job by using the metal itself.
   b. you don't use a fine sandpaper.
   c. you elevate the disc 75 degrees on the back or side.
   d. you use most of the grinding disc.

(Part 5)

True-False (TrB)

_____ 1. When you create a surface for plastic filler, you want a rough surface.

_____ 2. You use a 36-grit disc to create a rough surface.

_____ 3. When you create a surface for plastic filler, try to use the whole disc.

_____ 4. When you grind with the 16-grit disc, grind with the edge of the disc.

_____ 5. When you grind with the edge of the disc, it is expensive.

_____ 6. When you grind with the edge of your disc, it is economical for the shop.

_____ 7. You need a smooth surface for your plastic filler to adhere to your fender or panel.

_____ 8. When you grind to make a rough surface, you should worry about gouges in your metal.

_____ 9. You will fill up gouges with plastic filler.

_____ 10. After you grind with the edge of your disc, you can cut off the edge and use the disc again.

(Part 6)

Fill in the Blanks (TrD)

1. Herbert Nishii will talk about _____.

2. The disc grinder is a very _____ machine.

Fill in the Blanks (continued)

3. The disc _____ at a very high speed.

4. When the disc is moving, it goes from _____ r.p.m. to about _____ r.p.m.

5. If you put your hand on the edge of the moving disc, you will get _____.

6. Don't put _____ on the side of the disc unless you are going to grind it.

(Part 7)

Multiple Choice (TrA)

1. You should check the cord for

   a. breaks.
   b. shocks.
   c. tears.
   d. discs.

2. Some cords come with

   a. one prong.
   b. two prongs.
   c. three prongs.
   d. four prongs.

3. Two-prongs plugs

   a. are all right.
   b. are dangerous.
   c. are shocked.
   d. run on gasoline.

4. If the plug has three prongs, you should

   a. always plug in all of the prongs.
   b. not use it.
   c. always have the third prong grounded.
   d. cut the third prong off.

5. If you don't plug in the third prong, you might

   a. get wired.
   b. get tired.
   c. get shocked.
   d. die.

(Part 8)

Multiple Choice (TrA)

1. To protect your eyes you should

   a. wear overalls.
   b. wear a safety shield.
   c. wear scratches.
   d. look dirty.

2. You use the safety shield to

   a. cover your face.
   b. look good.
   c. see the world.
   d. be safe.

3. If you don't use a safety shield, you can

   a. see colors.
   b. ruin your eyes.
   c. get paint in your eyes.
   d. go blind.

(Part 9)

Multiple Choice (TrA)

1. Before you plug the grinder in, make sure

   a. everything is attached.
   b. your disc is on.
   c. you don't have to change anything.
   d. you put on your face shield.
   e. you're ready to go.

2. As you grind for a quality job, you need to

   a. watch the plug.
   b. watch your face shield.
   c. overlap your strokes on the metal surface.
   d. create an even surface.

3. For the quality grinding method, you

   a. use only the edge of the disc.
   b. use only one coarse disc.
   c. use as much of the disc as possible.
   d. use three discs, changing them from coarse to fine.

(Part 10)

Multiple Choice (TrA)

1. To prepare the surface for plastic filler,

   a. the angle of the disc is tilted.
   b. keep the disc as flat as you can.
   c. never touch the metal.
   d. use the least amount of area on the disc.

2. After you have grinded, your metal should not be

   a. tilted.
   b. hot.
   c. warped.
   d. cool.

3. If the metal gets hot enough to burn your hand,

   a. you should fry an egg.
   b. you should not touch it.
   c. chances are great that the panel will warp.
   d. water will warp it.

4. To keep your metal from getting too hot, you should

   a. feel the metal often.
   b. keep the grinder tilted.
   c. use water.
   d. keep the grinder moving.

UNIT VII

VIDEO LECTURE (SERIES B)

PLASTIC FILLING

PREVIEW

(Parts 1**-4**)

This part of the lecture is an introduction to plastic filling. First, Herbert Nishii explains that the use of plastic filler has revolutionized the autobody industry. He then shows the tools and supplies used in filling dents.

Questions To Think About:

1. Why has the use of plastic filler changed the autobody industry so much?
2. What was used to fill dents before plastic filler was created?
3. What supplies will you need to use in filling dents?
4. What tools will you need?

(Parts 5**-8**)

In this part of the lecture, Herbert Nishii shows the types of surfaces ready for application of plastic filler. He then shows how to prepare the plastic filler and cream hardener for use. He then shows how to mix the plastic filler with the cream hardener and how to apply it to the metal surfaces.

Questions To Think About:

1. Do you need to remove all of the paint from the metal to prepare the surface for plastic filler? Why or why not?
2. Why does Herbert Nishii massage the cream hardener tube?
3. Why is it necessary to keep the plastic filler can covered?

Preview continued

Questions To Think About: (continued)

4. When you mix the cream hardener and the plastic filler together, how long should you keep mixing?

5. How do you clean your tools?

(Parts 9**, 10**)

In this part of the lecture, Herbert Nishii demonstrates how to cut, shape, and sand the plastic filler.

Questions To Think About:

1. Should you take any safety precautions when cutting and sanding plastic filler?

2. When should you begin to cut the plastic filler?

3. What part of the Bondo file do you use when cutting and shaping the plastic filler?

4. When you use the feather-edger to sand the plastic filler, what different grits of sandpaper could you use?

EXERCISES

(Part 1)

True-False (TrB)

_____ 1. Plastic filling has revolutionized the autobody industry.

_____ 2. With plastic filling, body work can be finished very quickly.

_____ 3. With plastic filling, production in an autobody shop is cut in half.

_____ 4. Before, they used to rough out dents and fill them with sheet metal.

_____ 5. Nowadays, they have taken away plastic filling.

_____ 6. Now, you can use Bondo, and car repair is simple and fast.

(Part 2)

Multiple Choice (TrA)

1. The brand name of the plastic filler which Herbert Nishii is using is

   a. Cuz.
   b. Napa.
   c. Catalyst.
   d. Filler.

2. Napa is the name

   a. of a plastic.
   b. of a Bondo file.
   c. of a store.
   d. of a company.

3. "Hardening agent" also means

   a. filler.
   b. hard surface.
   c. catalyst.
   d. hardener.

4. Other tools you can use for this operation are

   a. plastic squee-gees.
   b. putty knives.
   c. Bondo files.
   d. hardware stores.

Multiple Choice (continued)

5. Another name for Bondo file is

   a. surface file.
   b. sand file.
   c. razor blade.
   d. sur-form file.

6. Bondo files are used to

   a. shape the plastic filler before it hardens.
   b. shine the plastic filler before it hardens.
   c. sand the plastic filler.
   d. cut the plastic filler before it hardens.

(Part 3)

Fill in the Blanks (TrD)

1. You will also need a _____.

2. A mixing pan can be made out of any _____ surface.

3. An ideal surface would be _____.

4. The next-best surface would be _____.

5. You can _____ your Bondo on any scrap sheet metal which is flat.

6. You can even use _____ if you like.

7. However, cardboard is not so ideal because it tends to soak up the _____ in the plastic filler.

(Part 4)

Multiple Choice (TrA)

1. For smoothening the Bondo use the

   a. feather-edger.
   b. orbital sander.
   c. sanding block.
   d. dinging hammer.

2. The trigger on the feather-edger is

   a. underneath.
   b. on the side.
   c. on top.
   d. on the end.

Multiple Choice (continued)

3. To hold the feather-edger, you

   a. grip the handles.
   b. grip the sides.
   c. grab the sandpaper.
   d. palm it.

4. Another tool you might use is

   a. an air wrench.
   b. a sanding block.
   c. your arm.
   d. your car body.

5. The lower the number of your sandpaper

   a. the finer it is.
   b. the rougher it is.

6. The 40-grit sandpaper is a

   a. fine sandpaper.
   b. medium sandpaper.
   c. coarse sandpaper.

7. The 150-grit sandpaper is

   a. fine sandpaper.
   b. medium sandpaper.
   c. coarse sandpaper.

8. The finest sandpaper on the market is

   a. 36-grit.
   b. 40-grit.
   c. 100-grit.
   d. 600-grit.

(Part 5)

Multiple Choice (TrA)

1. What are the two surfaces for plastic filling which Herbert Nishii shows in the lecture?

   a. bare metal surface
   b. wet surface
   c. 36-grit surface
   d. rough surface

2. Which surface is recommended on your plastic filler can?

   a. bare metal
   b. rough

3. Which surface is recommended in the industry?

   a. bare metal
   b. rough

Multiple Choice (continued)

4. Why should you make a rough surface when you need to work fast?

   a. The rough grinding takes less time.
   b. The rough grinding looks better.
   c. The plastic filler bonds to the rough surface better.
   d. The plastic filler will peel nicely when it is rough.

5. Why is a bare metal surface not good when you need to work fast?

   a. The bare metal is not shiny enough.
   b. You can sand the filler right away.
   c. The plastic filler tends to peel from the bare metal surface.
   d. The bare metal has a rough surface.

(Part 6)

Short Answer (TrC)

1. How can you save or conserve plastic filler?

2. Why shouldn't you waste plastic filler?

3. Why should you mix your plastic filler?

4. Why does the plastic filler at the top of the can tend to be softer?

5. What tool do you use to mix the plastic filler?

(Part 7)

Fill in the Blanks (TrD)

1. Another thing you will be using is _____.

2. The cream hardener is a _____.

3. When you mix the catalyst with your plastic filler, it gets _____.

4. After you mix the plastic filler with the cream hardener, do not put it back into the _____.

5. To mix the cream hardener, you _____ the tube.

6. Only _____ will tell you how much Bondo and hardener to use.

Fill in the Blanks (continued)

7. You should always try to cover your filler so that the _____ don't evaporate.

8. You should get your cream hardener and read the _____.

9. The cream hardener is a _____ color, and the plastic filler is _____ in color.

(Part B)

Multiple Choice (TrA)

1. When you mix the cream hardener and the plastic filler together, you should use a

   a. swirling motion.
   b. kneading motion.
   c. putty-knife.
   d. squee-qee.

2. You should mix the cream hardener and plastic filler until

   a. all the streaks come out.
   b. it looks like bread.
   c. it has streaks of red and light grey in it.
   d. it has an even color all the way through.

3. If there is a deeper dent, you should

   a. put a little bit more filler in it.
   b. apply the filler evenly.
   c. apply the filler roughly.
   d. knead it.

4. If you don't mix the cream hardener and plastic filler enough, you will

   a. have very hard spots in your filler.
   b. get dirty tools.
   c. have bigger dents.
   d. have soft spots in your filler.

5. After you apply the plastic filler, remember to

   a. have soft spots in your filler.
   b. wash your hands.
   c. clean your tools.
   d. look for very very hard spots.

(Part 9)

Fill in the Blanks (TrD)

1. After you apply your plastic filler, give it time to _____ or harden.

2. When you sand and cut the plastic filler, you create a lot of _____.

3. Fine particles of _____ go into the air.

4. This plastic filler dust is _____ to your health.

5. To protect your lungs, you need a _____.

(Part 10)

Multiple Choice (TrA)

1. You should cut the Bondo when it is

   a. hard.
   b. hardening a little bit.
   c. still a little soft.
   d. in your mask.

2. When you are filing remember to

   a. cross file.
   b. double your work.
   c. get the proper contour.
   d. drop your file.
   e. work from inside-out.
   f. work from the outside edge in.
   g. work comfortably.
   h. work slowly.

3. With a half-round Bondo file, you should use

   a. the whole file.
   b. the middle of the file.
   c. the outside edge.
   d. the end of the file.

4. When you use the feather-edger to sand plastic filler, you can use

   a. a 36-grit or 40-grit sandpaper for fast sanding.
   b. a 60-grit or 80-grit sandpaper for fast sanding.
   c. a 36-grit or 40-grit sandpaper for smooth sanding.
   d. a 60-grit or 80-grit sandpaper for smooth sanding.

5. In a shop, when you are working fast for production, what tool do you use to sand the plastic filler?

   a. Vixen file
   b. Bondo file
   c. sanding block
   d. feather-edger

UNIT VIII

VIDEO LECTURE (SERIES B)

WELDING

PREVIEW

(Parts 1** - 4**)

Herbert Nishii gives an introduction to welding by naming and comparing the two types of welding setups which can be found in shops. He also explains the uses of the oxyacetylene torches. He then names and explains the parts of the oxyacetylene torch setup. Finally, he shows and explains the other equipment, tools, and materials needed for oxyacetylene welding or brazing.

Questions To Think About:

1. What are the two types of welding setups?
2. What is the oxyacetylene torch used for in an autobody shop?
3. What are the parts of the oxyacetylene torch setup?
4. What are the tools and supplies needed for oxyacetylene welding?

(Parts 5** - 10**)

Herbert Nishii tells about safety measures for welding. He then shows how to turn on the tanks and regulators and adjust the flame on the torch. He explains the proper way to prepare the surface for welding, and then explains and shows the procedures for steel rod welding. He also shows how to quench the welded area, hammer the weld down, and use the wire brush to keep the surface clean. He makes a good, even weld (bead), and then makes a bad, uneven bead so you can compare the way they look.

Questions To Think About:

1. What are two safety measures for welding?
2. What is the correct sequence for turning on and adjusting the tanks and regulators and torch valves?

Preview continued

Questions To Think About: (continued)

3. How can you prepare the surface for welding?

4. Why do you quench the metal?

5. Why do you use the wire brush?

6. What is the bad weld (bead) called?

(Parts 11** - 17**)

Herbert Nishii demonstrates the welding movements of the torch tip and rod, with the torch flame off to show the movements more clearly. He then explains and demonstrates the brazing techniques. He shows the equipment, tools, and supplies he will need. He demonstrates the metal heating procedure for brazing, and how to coat the rod with flux and apply the braze onto the metal. He makes two brazes so that the appearances of a good one and an uneven one can be compared. He also explains the method of putting a patch onto metal by tack welding and stitch welding to make a continuous braze. Finally, Herbert Nishii shows the correct sequence to turn off all valves, tanks, and regulators.

Questions To Think About:

1. What equipment, tools, and supplies are needed for brazing?

2. How should you heat the the metal surfaces for brazing?

3. How should you coat the brazing rod with flux?

4. What does a good braze bead look like?

5. What does a bad braze bead look like?

6. What is a stitch weld? What is a tack weld?

7. Why should you apply patches with tacks and then stitches, rather than just continuing to weld all the way around the patch?

8. What is the correct sequence for turning off the valves, tanks, and regulators?

EXERCISES

(Part 1)

True-False (TrB)

_____ 1. Welding is bonding metal together.

_____ 2. There are two kinds of welding setups.

_____ 3. In this lecture Herbert Nishii will demonstrate the arc welding electrical torch setup.

_____ 4. Most shops do not have arc welders.

_____ 5. Most shops specialize in frame repair.

_____ 6. Oxyacetylene torches are used for making patches and for welding tears and breaks in fenders.

_____ 7. Oxyacetylene torches are cheaper than arc welders.

_____ 8. Oxyacetylene torches are not as dangerous as arc welders.

(Part 2)

Fill in the Blanks (TrD)

1. The large, green container has _____ in it.

2. The smaller container has _____ in it.

3. The acetylene tank is painted _____, _____, or _____.

4. _____ is a flammable gas.

5. _____ is a non-flammable gas.

6. _____ show how much gas you have in your tanks.

7. _____ with smaller numbers show how much pressure is in the gas lines.

8. The regulator and main valve are used to _____ the gas.

(Part 3)

Fill in the Blanks (TrD)

1. On your torch, the acetylene line is colored _____.
2. The oxygen line on your torch is colored _____.
3. The _____ torch tip comes off very easily and can be put on very easily.
4. You should point your torch tip in the direction that the _____ point.
5. If you have the torch tip in the proper direction, you have easier _____ to your valves.
6. If your hand or wrist accidentally moves a valve on the torch, you might _____ your mixture of oxygen and acetylene.

(Part 4)

Short Answer (TrC)

1. Name six other things you will use when you are welding.
2. What are the names of the three types of rods?
3. Which rod is used for welding two similar metals together?
4. Which rod is used for putting patches onto rust?
5. Which rod is used for welding tears in your fenders?

(Part 5)

Cloze (TrG)

Okay. To introduce you a little bit more into your w _ _ _ _ _ _, before I start actual welding, would be your s _ _ _ _ _. In the safety, you don't have to r _ _ _ _ _ _ _ very much. Just have to remember to wear your g _ _ _ _ _ _, protect your eyes from any s _ _ _ _ _ flying from the welded

Cloze (continued)

area. Also it's to p _ _ _ _ _ _ your eyes from getting blind, from getting b _ _ _ _ _. Because these lenses are treated, they're dark, dark lenses. They're d _ _ _ _ _ than your regular sun glasses. They protect your eye a lot b _ _ _ _ _. Another thing is, when you work with your torch, _ _ _ _ _ _ _ of using a lighter, a regular cigarette lighter, try to use your s _ _ _ _ _. Your striker produces only the spark to l _ _ _ _ the torch. It doesn't produce a g _ _ and a spark, which your lighter does. So try to use only your s _ _ _ _ _.

(Part 6)

Short Answer (TrC)

1. Where should you stand when turning the tanks on?
2. What might happen if the regulator joint breaks or is faulty?
3. Why shouldn't you breathe the acetylene gas?
4. What should you do if you have any leaks in your acetylene tank, regulator, hose, or torch?
5. If somebody lights a cigarette when there is an acetylene leak in your torch setup, what might happen?
6. Is oxygen flammable when it is concentrated?

(Part 7)

Short Answer (TrC)

1. Which tank should you turn on first?
2. How much do you turn it? Why?
3. What should you do if your boss tells you to turn it only a quarter-turn?

Short Answer (continued)

4. What tank do you turn on next?

5. How much do you turn it?

6. What can you check to see how much gas is left in the tank?

7. How do you adjust the amounts of gas pressure in the lines?

8. What should the readings on the regulator gauges be?

(Part 8)

Fill in the Blanks (TrD)

1. Right after you light your torch, the acetylene will create a flame with a lot of _____.

2. When you turn up the acetylene, the flame will _____ and there will be a lot less smoke. There will also be a _____ color close to the torch tip.

3. When you open the oxygen, an ideal flame will have a _____ in the middle.

4. If you have too much oxygen, there will be a _____ sound.

5. If you have too little oxygen, you will have a long, _____ flame with two separate _____.

6. When you turn off your torch, you turn off your _____ first.

(Part 9)

Short Answer (TrC)

1. How do you prepare the metal surface for welding?

2. What is the purpose of steel welding rods?

3. What is the purpose of your hammer in this procedure?

4. What is the purpose of the wire brush?

5. What is the purpose of the water and rag?

Short Answer (continued)

6. If you put too much heat onto your panel, what might happen?

(Part 10)

Multiple Choice (TrA)

1. In steel rod welding you heat up the panel to make a

   a. panel shape.
   b. panel warping.
   c. molten puddle.
   d. neutral flame.

2. After heating your panel, you put the steel rod into the puddle to make your

   a. heat.
   b. torch.
   c. flame.
   d. bead.

3. The ideal flame for your torch is also called a

   a. bead.
   b. neutral flame.
   c. rod.
   d. liquid state.

4. You should hold your torch at an angle of

   a. forty-five degrees.
   b. fifty-five degrees.
   c. fourteen degrees.
   d. ninety degrees.

5. As you weld, _____ might get on your clothes.

   a. filler
   b. sparks
   c. paint
   d. dirt

6. To get an even bead you need

   a. a friend.
   b. money.
   c. rods.
   d. practice.

7. An uneven bead is also called

   a. an ugly bead.
   b. chickens.
   c. chicken-shit.
   d. steel rod welding.

(Part 11)

Fill in the Blanks (TrD)

1. The two types of beads that Herbert Nishii shows you are called a _____ weld and a _____ weld.

Fill in the Blanks (continued)

2. When you weld, you put the torch in the hand you feel most _____ with.

3. When you weld, you should let the _____ in the flame touch the metal itself.

4. You should move the torch tip in small _____.

5. As the molten puddle forms, you keep the torch moving _____.

6. It takes a lot of practice in order to get _____.

(Part 12)

Short Answer (TrC)

1. Why are there two types of brazing rods?

2. What is the white coating on one of the brazing rods?

3. How do you coat the brazing rod which does not have the white coating?

4. Which kind of brazing rods do most shops have? Why?

(Part 13)

Short Answer (TrC)

1. Do you create a molten puddle when you are brazing?

2. When you heat the metal, what color should it be?

3. What is the welding or brazing torch flame called?

4. To coat the brazing rod with flux, what two things do you need to do?

5. As you are brazing, how often do you need to flux-coat your rod?

6. What is the purpose of the flux?

(Part 14)

Fill in the Blanks (TrD)

1. You don't want a big bead when you are brazing because _____.
2. You should try to keep your bead very _____ and _____.
3. Your hammer is used to _____ your braze.
4. Your wire brush is used to _____.
5. A good bead is _____ and _____.

Number in Order (TrE)

To braze the metal, you

_____ dip the rod into the can of flux.

_____ use your hammer.

_____ heat the metal to a cherry red.

_____ use the wire brush.

_____ heat the end of the brazing rod.

_____ apply the rod and torch to the heated metal.

_____ quench the area.

(Part 15)

Short Answer (TrC)

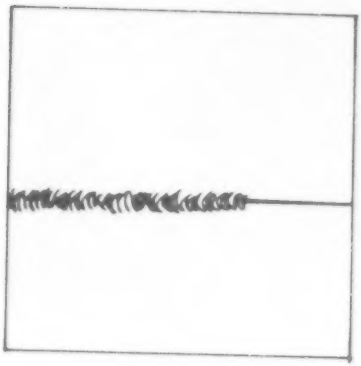
1. When you weld and braze, do you make the bead continuous?
2. Why do you need to tack and stitch before making a continuous weld?
3. Will you always be using the hammer and wire brush as often as Herbert Nishii is doing in the lecture?

(Part 16)

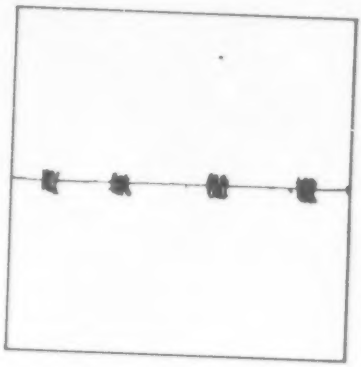
Fill in the Blanks (TrD)

1. After you tack weld, you should _____.
2. If the metal becomes too hot, you should turn the flame up towards your _____.
3. You should try not to _____ yourself.
4. After you stitch weld, you have a _____ braze.
5. You can learn more about welding through _____, through _____, or at _____.
6. You can also learn about welding if you _____ up on it.

Label the Pictures (TrH)

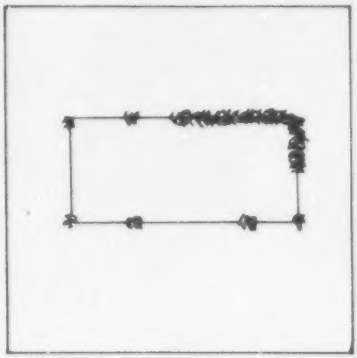


1. _____



2. _____

Label the Pictures (continued)



3. _____

(Part 17)

Number in Order (TrE)

To turn off the valves. tanks, and regulators, you

_____ turn off the oxygen valve on your torch.

_____ open the acetylene valve on your torch, let the acetylene escape from the line, and close the valve.

_____ turn off the acetylene tank.

_____ turn off the oxygen tank.

_____ open the acetylene tank regulator.

_____ open the oxygen valve on your torch, let the oxygen escape from the line, and close the valve.

_____ open the oxygen tank regulator.

_____ turn off the acetylene valve on your torch.

UNIT IX

VIDEO LECTURE (SERIES B)

THE SPRAY GUN

PREVIEW

(Parts 1**, 2**)

In this introduction, Herbert Nishii explains the importance of the spray gun in autobody repair work. He then tells the uses of the three types of spray guns found in autobody shops, and also mentions the names of three manufacturers of good quality spray guns.

Questions To Think About:

1. Why is the spray gun (and the paint job it produces) so important in autobody repair shops?
2. What are the three types of spray guns?
3. What are the names of three manufacturers of good paint guns?
4. Which is the newest model paint gun?

(Parts 3**, 4**)

Next, Herbert Nishii names and describes the functions of many parts of the spray gun.

Questions To Think About:

1. What are the names of the spray gun parts?
2. How many adjustment knobs are there?
3. How do you find out how much air pressure is going into the gun?
4. What will keep the paint from dripping out of the Sharpe model gun if you are painting upside down or sideways with it?

Preview continued

(Parts 5**, 6**)

Herbert Nishii describes the adjustments for the spray gun in more detail.

Questions To Think About:

1. How do you change the size (width) of your fan (spray pattern)?
2. How do you adjust the amount of air going into the gun?
3. How do you adjust the amount of paint coming out of your gun?
4. How do you make a horizontal fan (spray pattern) become a vertical one?

EXERCISES

(Part 1)

Multiple Choice (TrA)

1. The spray gun is one of the most important tools in your shop because

   a. it does important body work.
   b. it creates the paint job that customers see.
   c. you will paint the body-fender shop with it.
   d. it is very glossy and smooth.

2. A primer gun is

   a. filled with primer.
   b. spotless.
   c. filled with lacquer.
   d. dirty.

3. A lacquer gun is

   a. used for touch-ups.
   b. a junk gun.
   c. used for priming.
   d. shiny and clean.

4. An enamel gun is

   a. used for complete paint jobs.
   b. filled with lacquer.
   c. clean and shiny.
   d. dirty.

(Part 2)

Multiple Choice (TrA)

1. If you have a paint gun, you should

   a. keep it shiny.
   b. keep it clean.
   c. keep it filled with dirt.
   d. keep moisture out of the inside.

2. Binks, DeVillbus, and Sharpe are

   a. body shops.
   b. paint gun models.
   c. old-timers.
   d. manufacturers of good paint guns.

3. The newer model paint gun is the

   a. Binks.
   b. Bondo.
   c. DeVillbus.
   d. Sharpe.

Multiple Choice (continued)

4. Why should you buy a "big name" paint gun?

   a. "Big name" manufacturers have a good supply of paint gun parts.
   b. You can send your gun to those manufacturers for servicing.
   c. They are good quality guns.
   d. They are cheaper guns

(Part 3)

Short Answer (TrC)

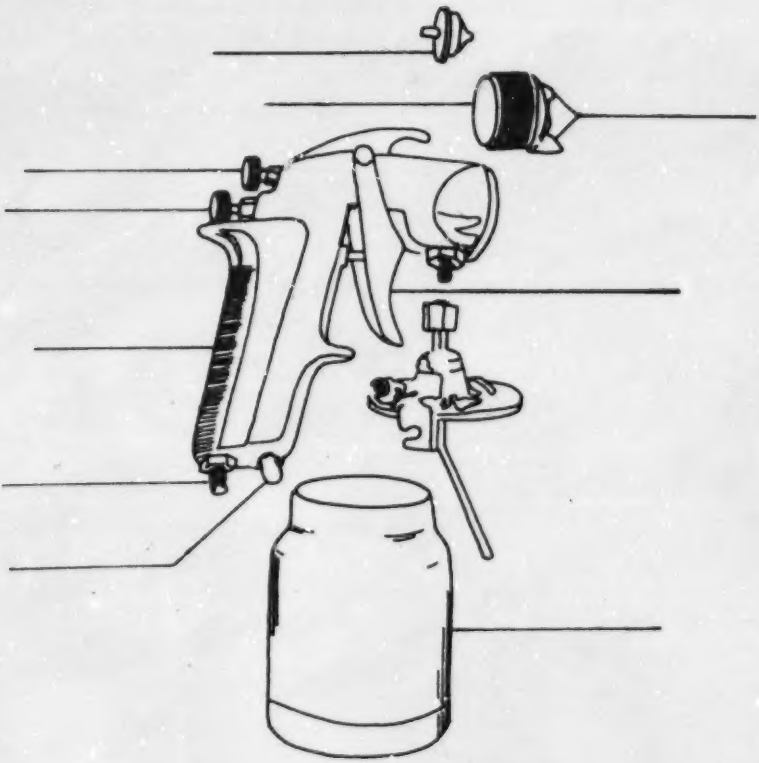
1. Which part of the spray gun holds the paint?
2. Which part is where you hold it?
3. Which part do you pull to make the paint come out?
4. Which part do you have to remove sometimes to overhaul your gun?

(Part 4)

Short Answer (TrC)

1. Which part controls how much paint is coming out of your gun?
2. Which part controls how much air is going into your gun?
3. Which part tells the pressure of the air going into the gun?
4. Which part is helpful for painting upside down or sideways?

Label the Pictures (TrH)



(Part 5)

Multiple Choice (TrA)

1. If you want to make the spray wider as it comes from your gun, you adjust

   a. the air horns.
   b. the fluid.
   c. the fan.
   d. the no-drip.

2. If you want more paint coming out of the gun, you

   a. open the fluid adjustment.
   b. turn up the fluid adjustment.
   c. close the fan.
   d. turn down the fan.

3. If you want to spray a large surface, you

   a. open the fluid valve.
   b. close the fluid valve.
   c. turn down the air pressure.
   d. turn up the air pressure.

4. If you want to spray a smaller area, you

   a. open the fluid valve.
   b. close the fluid valve.
   c. turn down the air pressure.
   d. turn up the air pressure.

(Part 6)

Multiple Choice (TrA)

1. If your air horns are vertical, your fan will be

   a. horizontal.
   b. vertical.
   c. up and down.
   d. sideways.

2. If you want to spray with a side-to-side arm movement, you put the air horns

   a. horizontal.
   b. vertical.
   c. up and down.
   d. sideways.

3. Another word for fan is

   a. valve.
   b. spray pattern.
   c. fluid.
   d. air horns.

4. You should paint so that the fan strokes

   a. overlap halfway.
   b. cover your hand.
   c. go opposite.
   d. look simple.

UNIT X

VIDEO LECTURE (SERIES B)

INTRODUCTION TO PAINTING

PREVIEW

(Parts 1**-3**)

Herbert Nishii describes the two types of paint jobs done in autobody shops. He then lists on the blackboard, in order of preference from best choice to worst, the types of paint used for the two kinds of paint jobs. He then explains the reasons for the preferences by explaining the characteristics of the different types of paint and the production needs of the autobody repair shops.

Questions To Think About:

1. What are the two types of paint jobs?
2. What are the three types of paints?
3. Which paint is preferred for which type of job?
4. Which paint dries fastest?
5. Which paint has a very high gloss and needs no buffing or compounding?

(Parts 4**-8**)

Herbert Nishii explains the initial steps for preparing a car for a complete paint job. This part of the lecture explains the preparations done before the car is taken into the paint booth.

Questions To Think About:

1. What are two kinds of cleaning agents used to take the wax, dirt, and polish off a car before it is painted?
2. What grit sandpaper should you use when sanding the car?
3. What materials can you use for masking the car?
4. Why is a final blow down so important?

Preview continued

(Parts 9**-13**)

Herbert Nishii explains the preparation of the spray booth, the painting equipment, and the final preparations of the car which are done in the spray booth. He also explains the proper techniques for painting the whole car.

Questions To Think About:

1. How do you prepare the paint booth?
2. After you put the car into the spray booth, what can you use to remove any remaining dust on the car?
3. What must you do to prepare the painting equipment?
4. What is a good technique for painting the car?
5. Does it matter which part of the car you begin painting first?
6. What is the purpose of the spray booth fan?

x

EXERCISES

(Part 1)

Fill in the Blanks (TrD)

1. The two types of paint jobs are _____ and _____.

2. Touch-up painting is _____ painting, or a paint job that is confined to a small _____.

3. Your complete job is painting the _____ car.

4. In touch-up painting the order of paint preferences is first _____, second _____, and third _____.

5. In complete paint jobs, the order of paint preferences is first _____, second _____, and third _____.

6. The reason why you have these preferences is the _____ and _____ involved.

(Part 2)

Multiple Choice (TrA)

1. Since autobody shops do a lot of touch ups, they want the cars to

   a. go in and out of the shop very quickly.
   b. sit there for quite a while.

2. For touch-up painting, the preference is acrylic lacquer because

   a. it is prettier.
   b. it is cheaper.
   c. it dries faster.
   d. the boss likes it.

3. For complete paint jobs, drying time is not so important because

   a. the car usually sits in the shop for a long time anyway.
   b. the car is in and out.

(Part 3)

Multiple Choice (TrA)

1. In complete paint jobs, the preference is acrylic enamel because

   a. it is less work.
   b. it has a high gloss.
   c. you don't have to buff it.
   d. you don't have to compound it.

2. If you use enamel for your touch-ups,

   a. you need to do it fast.
   b. you have to spray a very large area.
   c. it takes longer to paint.
   d. the drying time is longer.

3. If you use lacquer paint for complete paint jobs, it is a lot more work because you have to

   a. spray so many coats.
   b. sand the lacquer coats.
   c. buff the lacquer.
   d. weld the lacquer.

4. What type of cars might get a complete lacquer job?

   a. a custom car.
   b. a car-show car.
   c. a policeman's car.
   d. your own car.

(Part 4)

Number in Order (TrE)

Before you put the car in the paint booth for a complete paint job, you have to

_____ prepare the body work for painting.

_____ do the body work.

_____ prepare the whole car for painting.

Short Answer (TrC)

1. What is a paint booth?

2. What is the foundation of everything?

3. What job will Herbert Nishii talk about in another lesson?

(Part 5)

Fill in the Blanks (TrD)

1. Preparation of the whole car means that the whole car is taken as one unit, and not individual _____ like preparing your body work.

2. You wipe down the whole car with a _____ agent, such as a _____.

3. A degreaser will take off _____, _____, deposits of _____, and other types of polish you use on the car or chrome.

4. You can use a degreaser such as _____ from the _____ company.

5. Or you can use a solvent such as _____ from the _____ company.

(Part 6)

Multiple Choice (TrA)

1. When you sand the complete car, you can use

   a. 36-grit sandpaper.
   b. 400-grit sandpaper.
   c. 500-grit sandpaper.
   d. 600-grit sandpaper.

2. The direction you should sand is

   a. up and down.
   b. in circles.
   c. forward and back.
   d. criss-cross.

3. The reason why you should sand in one direction is that

   a. there will be no sand scratches.
   b. sand scratches will look like grains in wood.
   c. sand scratches will not be noticable.
   d. sand scratches are beautiful.

4. If you water-sand the car, you need to

   a. blow it down.
   b. dry it off.
   c. dry-sand it.
   d. turn it around.

(Part 7)

Multiple Choice (TrA)

1. For masking you can use

   a. production paper.
   b. newspaper.
   c. tape.
   d. plastic filler.

2. The tape and paper is used to cover

   a. windows.
   b. bumpers.
   c. hoods.
   d. large chrome areas.

3. Some shops use newspaper instead of production paper because newspaper is

   a. a lot cheaper.
   b. better quality paper.
   c. more expensive.
   d. free if you collect it from friends.

4. When masking, you cover up

   a. whatever parts of the car you don't want painted.
   b. the whole car.
   c. only the chrome.
   d. only the windows.

5. After you mask the car, you inspect the whole car by

   a. checking out the body work.
   b. checking out the taping.
   c. getting the dirt out of the seams.
   d. checking out the paint booth.

(Part 8)

Short Answer (TrC)

1. Why do you do a final blow-down?

2. What will the paint job look like if you don't blow the car down before painting it?

3. What parts of the car do you need to remember to blow down?

(Part 9)

Multiple Choice (TrA)

1. To prepare your spray booth, you wet down

   a. the outside of the spray booth.
   b. your whole spray booth area.
   c. the inside of the car.
   d. the inside of the spray booth.

2. You wet down the spray booth to

   a. clean it with soap.
   b. minimize the dust.
   c. wash the car.
   d. keep the car dust-free.

3. When you bring the car into the spray booth,

   a. try not to damage it.
   b. try to damage it.
   c. have somebody guide you in.
   d. ding up the car.

4. When you have the car in the spray booth,

   a. blow down the car.
   b. cover the tires.
   c. blow down the booth.
   d. cover the molding and windshield.

(Part 10)

Multiple Choice (TrA)

1. You tack the car

   a. with a varnish-soaked rag.
   b. to pick up any left-over dust.
   c. by using a transformer on it.
   d. inside the various seams, tires, and in the engine.

2. The purpose of the transformer is to

   a. mix your paint.
   b. compress the air.
   c. clean the line from the compressor to the gun.
   d. catch rubbish coming from the compressor.

3. You bleed your transformer to

   a. clean the line connected to your spray gun.
   b. make it die.
   c. clean the transformer
   d. let the water and oil drip out.

(Part 11)

Fill in the Blanks (TrD)

1. If you use lacquer paint, you thin it out with _____.
2. If you use enamel paint, you thin it out with _____.
3. When you mix the paint, how much solvent you use depends upon _____, _____, and _____.
4. Different people mix their paints in different ways: some people reduce it _____, some people reduce it _____.

(Part 12)

Fill in the Blanks (TrD)

1. You can find out how much air pressure to use by _____.
2. Some paints will tell you to have _____ pounds air pressure at the gun, some _____, _____, even _____ pounds air pressure.
3. For spraying technique, some people spray panel by _____. Some people will spray _____ panels, and some people will spray the whole _____ of the car.
4. Your painting technique depends upon how you learn, how _____ you want to go, the type of _____ you're using and how _____ it's drying.

(Part 13)

Short Answer (TrC)

1. What will determine where you start painting your car?
2. Why should you begin spraying on the end of the car which is furthest from the fan?
3. If you begin spraying on the other end of the car what will happen?

UNIT XI

VIDEO LECTURE (SERIES B)

PREPARATION FOR PAINTING

PREVIEW

(Parts 1**, 2**)

Herbert Nishii intoduces the topic "preparing for paint," and explains why preparation for painting is important and time-consuming. He says that he will explain two ways of doing the preparations. He then shows the supplies and equipment necessary for preparations.

Questions To Think About:

1. Why are the preparations for painting so important?
2. What are the two ways to prepare for painting?
3. What is the main difference between the two ways?
4. What tools will be needed?
5. What supplies will be needed?

(Parts 3**-7**)

Herbert Nishii first shows how to feather-edge the outside edge. He then explains two ways of priming and demonstrates the way to apply primer for a quality job. He also explains and demonstrates the application of glazing putty.

Questions To Think About:

1. When you are feather-edging, what can you do to prevent the metal from becoming too hot and warping?
2. When priming for production, how many coats of primer do you apply?
3. When priming for a quality job, how many coats of primer do you apply?

Preview continued

Questions To Think About: (continued)

4. Between coats of primer, how long do you have to wait?

5. After your last application of primer, how long should you wait before applying the putty?

6. How many coats of glazing putty should you apply?

(Parts 8**-13**)

Herbert Nishii explains two methods of sanding the dried glazing putty and demonstrates part of the sanding procedure. He then applies primer on the puttied surface, applying many coats to fill up the scratches for a quality job. He then spot putties the remaining scratches, sands the spot puttied areas, and again applies primer to the area.

Questions To Think About:

1. When sanding glazing putty, what kinds of sandpaper do you use 1) for production jobs (autobody shop jobs) 2) for a quality job?

2. When sanding glazing putty, what sanding technique does Herbert Nishii use?

3. How do you check the glazing putty for smoothness?

4. How many coats of primer does Herbert Nishii use to fill up the scratches for a quality job?

5. If you put the spot putty on too soon, while the primer is still wet, what will happen?

6. When sanding the spot putty (before putting on the final two wet coats of primer) what kinds of sandpaper can you use?

EXERCISES

(Part 1)

Fill in the Blanks (TrD)

1. Today Herbert Nishii will demonstrate a procedure called _____.

2. The preparation for painting is important because it is your _____ for a good paint job.

3. Preparation for paint involves some _____, a lot of the _____, and takes a little bit of time.

4. Herbert Nishii will tell you how to do it two ways, a _____ way and a _____ way.

5. Doing the preparation for paint a good way takes a lot of time, and doing it a _____ way takes a shorter amount of time.

(Part 2)

Short Answer (TrC)

1. What power tool is used for feather-edging?

2. What tools will you use to apply glazing putty?

3. What brand of glazing putty will Herbert Nishii be using?

4. What hand tool will you need for hand-sanding the glazing putty?

5. What kind of spray gun will you be using?

(Part 3)

Fill in the Blanks (TrD)

1. In order to prepare your surface, you need to _____ the outside edge.

2. You use the _____ or _____ to prepare your surface.

Fill in the Blanks (continued)

3. Herbert Nishii is using a _____-grit sandpaper on the feather-edger.

4. You should try to _____ the surface to make sure that the metal isn't getting hot.

5. You should also hold the tool as _____ as possible to get a more even surface.

(Part 4)

Multiple Choice (TrA)

1. Your next step in preparing the surface is to

   a. warp your metal.
   b. plastic fill.
   c. prime.
   d. feel the surface.

2. In your production way of priming, you

   a. lay the primer on thick and wet.
   b. only paint one transparent coat of primer.
   c. paint two coats of wet primer.
   d. paint two transparent coats and a third wet coat.

3. In your good way of priming, you

   a. lay the primer on thick and wet.
   b. only paint one transparent coat of primer.
   c. paint two coats of wet primer.
   d. paint two transparent coats and a third wet coat.

(Part 5)

Multiple Choice (TrA)

1. When you prepare the primer gun, you adjust

   a. your fan.
   b. your fluid.
   c. your air pressure.
   d. your respirator.

2. When priming, you should watch

   a. the glazing putty.
   b. the overlap of the strokes.
   c. how wet or dry the primer is going on.
   d. the feather-edger.

Multiple Choice (continued)

3. After applying the third, wet coat, you need to wait for it to

   a. get wet.
   b. flash.
   c. set.
   d. become transparent.

4. If you paint coats of primer with letting them flash,

   a. the solvents won't have a chance to evaporate.
   b. you would have a very soft bottom.
   c. you would have a hard coat.
   d. you would have a hard top.

(Part 6)

Multiple Choice (TrA)

1. If you put the putty on when the primer is wet,

   a. the primer will probably come off.
   b. it will look nice.
   c. it will become dry.
   d. the primer will run.

2. You can find out when the primer is dry by

   a. putting the putty on.
   b. looking at it.
   c. feeling with your hand over the area.
   d. listening to it.

3. If the primer is still wet, you can feel

   a. that it is not that cold.
   b. that it is very warm.
   c. a cool breeze coming through the primer.
   d. the putty.

4. When the air over the primer is not that cold

   a. you need to wait.
   b. you can apply your putty.
   c. you need to apply more primer.
   d. the solvents are still evaporating.

(Part 7)

Short Answer (TrC)

1. What is the purpose of glazing putty?

2. Do you use putty to fill up big dents?

3. What will happen to the putty if you use too much?

Fill in the Blanks (TrD)

1. You first application of putty should be _____.

2. After the first coat of putty, let it _____.

3. After the second coat of putty, you let it _____ for a while.

(Part 8)

Fill in the Blanks (TrD)

1. When you sand your glazing putty, you start off with a _____-grit sandpaper.

2. The sandpaper could be dry (fre-cut), or you could sand it with _____ for wet sanding.

3. If you are doing a production job, you start out with a _____ sandpaper, and finish it off with a very _____ sandpaper.

4. If you are doing a quality job at home, you might use a _____ sandpaper all the way through.

(Part 9)

Multiple Choice (TrA)

1. When you sand, you

   a. start at the outside edge.
   b. start in the center.
   c. cross-sand on the outside edge.
   d. cross-sand in the center.
   e. use a circular movement with the sanding block on the edge.
   f. use a circular movement in the center.

Multiple Choice (continued)

2. Herbert Nishii will not show the fine sanding because

   a. the procedure is the same.
   b. he wants to show a way to do a lot better job.
   c. you should not do it.
   d. you have a smooth surface now.

(Part 10)

Fill in the Blanks (TrD)

1. While you are sanding you should _____ the area.

2. You should be careful not to create _____ or _____ spots.

3. You should check to make sure that the putty has filled up the _____.

(Part 11)

Fill in the Blanks (TrD)

1. Usually, in production, you would go over it again with a _____ sandpaper and then shoot the primer.

2. Herbert Nishii will do it a different way, and fill up the scratches with _____.

3. He puts _____ coats of primer on to fill up the scratches.

4. You have to let the primer _____.

5. While waiting for the primer to dry, you should _____ on another job, or do something else on the car.

(Part 12)

Fill in the Blanks (TrD)

1. When you spot putty, you try to find _____ or _____ that have been left behind.

Fill in the Blanks (continued)

2. Make sure you do the steps _____.

3. If your boss tells you a way to do it, do it _____ way.

(Part 13)

Fill in the Blanks (TrD)

1. When you sand the spot putty, you can use a _____-grit sandpaper and then a _____-grit sandpaper.

2. You clear the area that you will prime by _____ it with the primer gun.

3. You use _____ coats of primer to cover the spot puttied surface.

UNIT XII

VIDEO LECTURE (SERIES B)

FINAL PREPARATION AND SPOT PAINTING

PREVIEW

(Parts 1**-3**)

In this section of the lecture, Herbert Nishii describes the final procedures for preparation for spot painting: compounding the outer edge, sanding the primered surface, blowing the surface off with the air gun.

Questions To Think About:

1. What is the purpose of compounding the outside edge?
2. What machine do you use to compound the edge?
3. What kind of sanding technique should you use?
4. Why do you need to blow the surface off?

(Parts 4**-8**)

Herbert Nishii shows the equipment and supplies needed for painting. He shows how to check the spray gun to see that it is in working order. He then explains the different proportions for mixing the lacquer paint with lacquer thinner for the first and later coats of paint. He demonstrates the mixing procedure and the painting technique for the cover (first) coats of paint. He then shows how to paint later coats of reduced paint. And last, he explains two different ways of getting a glossy surface to finish the job.

Questions To Think About:

1. What supplies will you need for painting?
2. What safety orecaution should you take when painting?
3. In what proportions should you mix your paint and thinner fcr the cover coats of paint?
4. What proportions should you have for later coats of paint?

Preview continued

Questions To Think About: (continued)

5. How much air pressure will you need?

6. Should you paint transparent coats?

7. What might happen if you do not pause or wait between applying the different coats of paint?

8. What are two possible methods of getting a gloss on the paint surface when it dries?

EXERCISES

(Part 1)

Short Answer (TrC)

1. When you compound the area surrounding the primer, what two things do you need to use?

2. How far outside the primer should you compound?

3. What does the compound do to the paint surface?

4. Why do you need to compound the surrounding area?

5. What tool does the buffer resemble?

6. How is the larger buffer different from a disc grinder?

7. What should you try not to do when using the buffer?

(Part 2)

Multiple Choice (TrA)

1. You put the compound on

   a. the area you'll be painting.
   b. the buffer.
   c. your arm.
   d. the area about two feet away from the edge of the primer.

2. When Herbert Nishii was using the buffer, he

   a. caught the ball.
   b. caught the buffer on the edge of the metal.
   c. made some scratches.
   d. had a little bit of a problem with the buffer.

3. The buffing compound

   a. takes away the roughness on the primer edge.
   b. takes away the primer edge.
   c. smoothens the inside of the primer.
   d. sands the outside area of the paint.

Multiple Choice (continued)

4. To smoothen the inside of the primer, you need

   a. the buffer.
   b. the compound.
   c. the sanding block.
   d. the feather-edger.

(Part 3)

Short Answer (TrC)

1. When you have finished sanding the primer, should you make the sand-scratches move in one direction?

2. Which direction should you make the sand-scratches go?

3. Why should you be careful not to sand off too much primer?

4. After you finish sanding, how do you clean off the surface?

(Part 4)

Fill in the Blanks (TrD)

1. When you mix your paint you should try to _____ the colors as closely as possible.

2. You need a _____, a can of _____, a _____ stick, a can of _____, and for safety you should wear a _____.

3. On your spray gun you should check the _____, _____, and _____.

(Part 5)

Fill in the Blanks (TrC)

1. Lacquer paint dries through _____ of the thinners inside your paint.

2. When you mix (reduce) the paint with thinner for the first coats of paint, it should be _____ part of paint to _____ parts thinner.

Fill in the Blanks (continued)

3. You could go a little thicker or thinner, but usually the reduction is _____ to _____ or maybe _____ to _____.

4. Primer reduction is strictly _____ to _____.

(Part 6)

Fill in the Blanks (TrD)

1. When you do lacquer jobs, you'll be _____ down your paint a lot.

2. When you reduce the paint mixture for the final coats of paint it will be _____ part or _____ part thinner than before.

3. The paint mixture for the final coats of paint would therefore be _____ parts of thinner to _____ part of paint.

(Part 7)

Fill in the Blanks (TrD)

1. When you first start to paint, you use a _____ type of paint.

2. You use a _____ air pressure so that the paint doesn't go into the air as overspray.

3. You apply the paint wet, not _____.

4. You use a _____ percent overlap.

5. You let it _____ for a while between coats, since you don't want it to _____.

6. Too much paint will cause it to collect in one area, and because the panel is sloping downwards the paint will _____.

7. At the end of each stroke, try to _____ your wrist.

8. This first application of paint is called your _____.

(Part B)

True-False (TrB)

_____ 1. For the later coats of paint, you need to reduce the paint two parts.

_____ 2. You should check to see if the colors match when mixing paint.

_____ 3. If the color isn't matching right, you might have to add a different shade of color to your paint.

_____ 4. When you start blending in, you should start from the inside and work your way out.

_____ 5. You should again crack your wrist and apply the paint wet when blending in the paint.

_____ 6. At this time you should be applying transparent coats of paint.

_____ 7. After painting, some shops will compound the area and buff it to get a shine.

_____ 8. After painting, some shops will sand it with a 600-grit sandpaper and then shoot a thinner coat of paint.

_____ 9. Herbert Nishii has left out a lot of steps on how to touch-up paint.

_____ 10. Herbert Nishii has given you a complete rundown of the painting procedures and steps.

_____ 11. You should listen to what your boss tells you about painting.

_____ 12. You should give Herbert Nishii's helpful hints to your boss.